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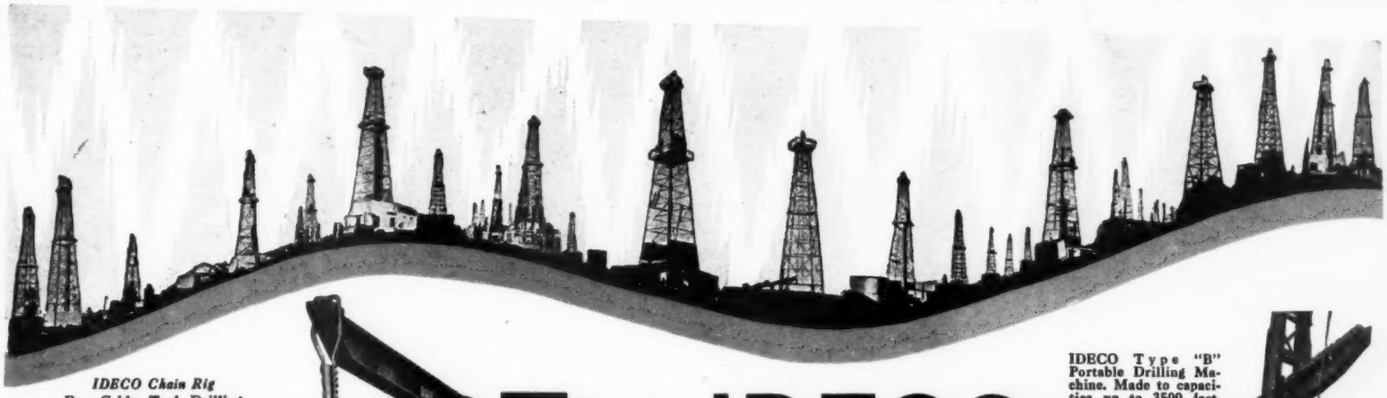

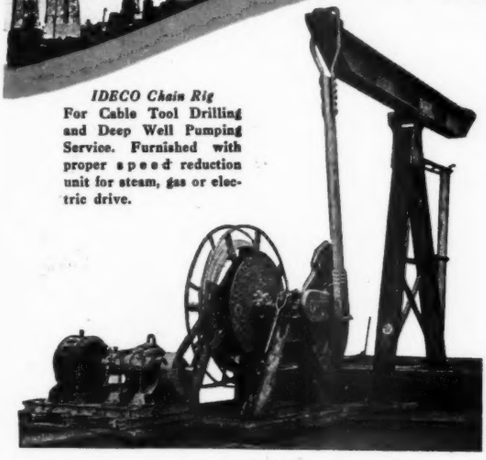

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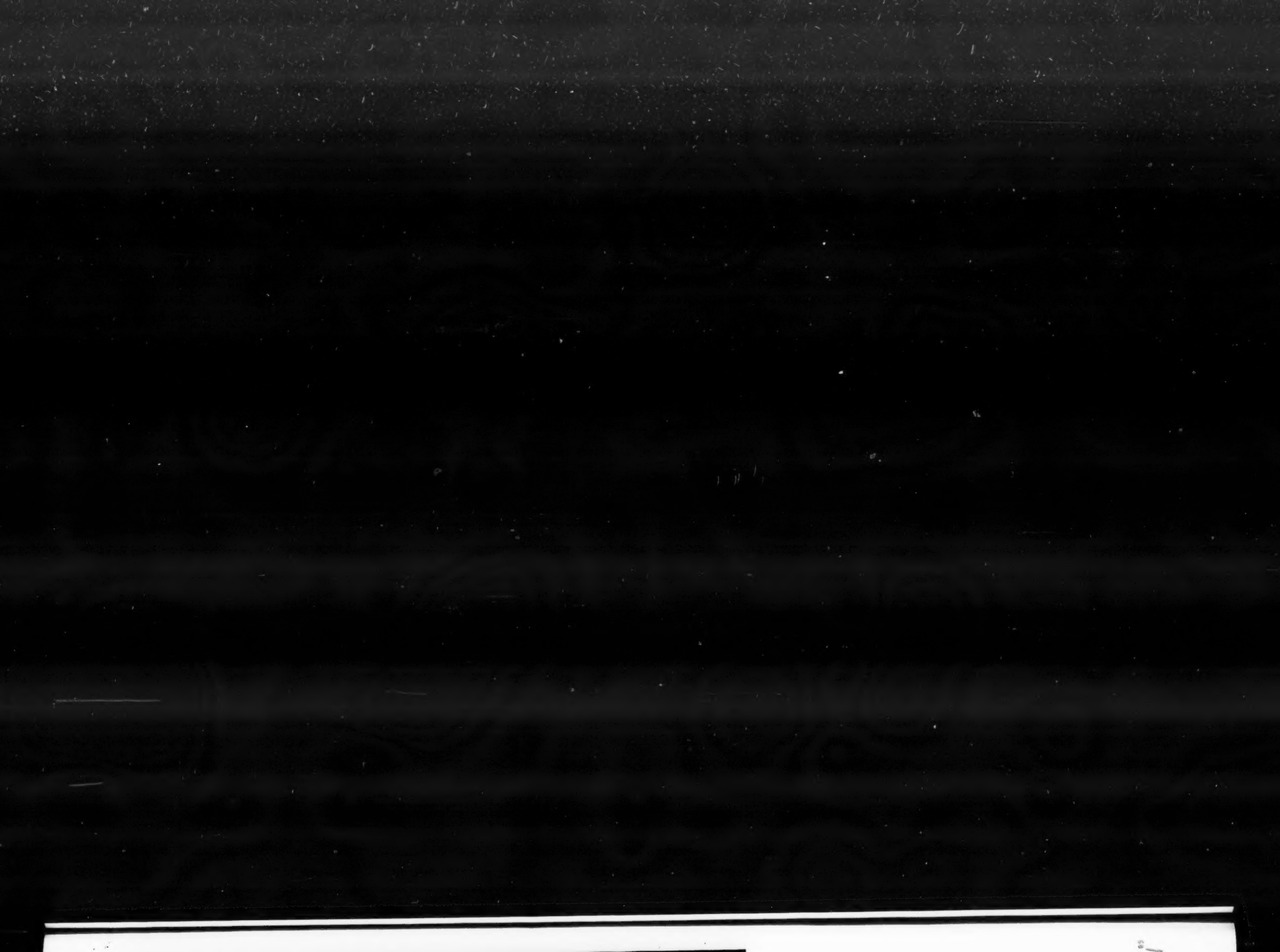

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More Optimism Evident As to Outlook

Highest production in 1930, week ending Feb. 22, average daily output 2,699,096 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

Statistical Position With Success in Curtailing Crude Oil Production Basis for Improvement Expected This Year

By Andrew M. Rowley

Lowest daily average crude oil production in United States during 1930 was for week ending Dec. 27 with average output of 2,144,074 bbls.

The passing of 1930 has had a psychological effect upon many oil men. A more optimistic feeling is noticeable as to prospects this year. Sentiments of a large number seem to have been expressed by one operator who, as the clock struck the midnight hour on December 31, said: "Well, thank goodness, that year is over. Now let's get busy and make this one a whopper."

The industry enters the new year with a very greatly improved statistical position. A glance at the graph below shows the situation as to crude oil production the first week of this year as compared to last year. The comparative figures cannot help but impress the most pessimistic. They prove beyond the shadow of a doubt the value of co-operation and the success which has been achieved by producers throughout the nation in the conservation movement and efforts to hold crude oil production to market requirements.

The foundation of conditions this year in the oil business will be laid during the next three months. Continued curtailment of crude oil production with co-operation on the part of refiners in holding manufacture of gasoline down to actual requirements without further additions to storage will place the industry on a sound footing April 1 when the main consuming season opens. Better prices are warranted and, undoubtedly, will be effective should the industry succeed in keeping gasoline stocks down to a total of 40,000,000 barrels on April 1 next.

Lifting proration in any flush field most certainly would result in an immediate drastic reduction in crude oil prices in that whole area at least. There can be no getting away from that fact. Even concerns with their own production, pipe lines and refineries would be affected by resulting low prices of gasoline so in the end everyone would suffer without anyone benefiting. Figures on potential production generally are conceded to be far above what these pools could make during any extended period of time.

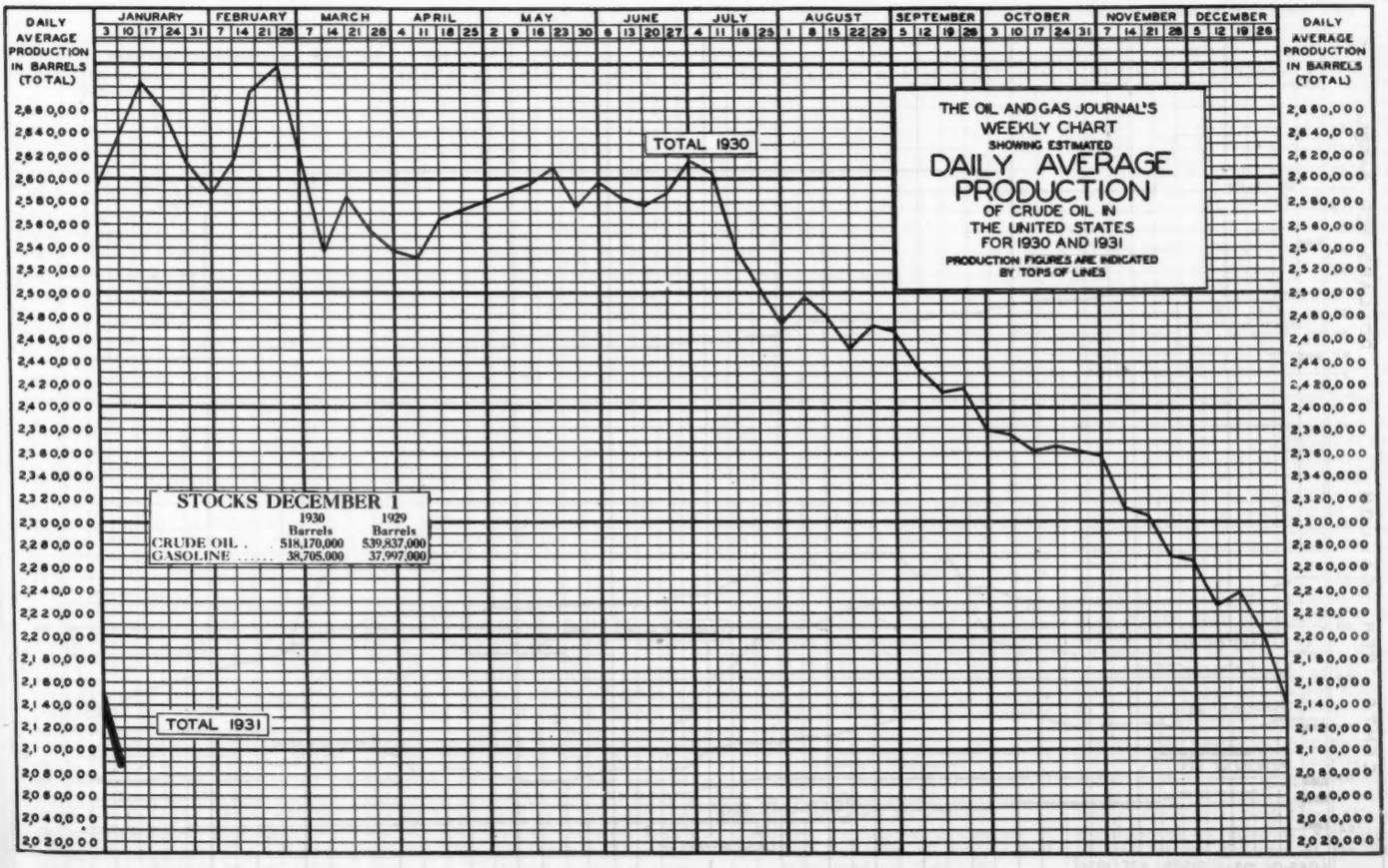
Separation of production into light and heavy oil, started by The Oil and Gas Journal early in 1925, has been discontinued as efficiency of refiners has made such classification unnecessary.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of crude oil in the United States for week ended January 3, and a comparison with the previous week follows:

	January 3	December 27
Oklahoma—		
Oklahoma City	86,545	87,245
Seminole-St. Louis	144,590	153,910
Remainder of State	217,610	216,610
Total Oklahoma	448,745	457,765
West Texas—		
Hendricks	54,410	56,256
Yates	94,915	96,813
Remainder	90,830	92,925
Total West Texas	240,155	245,994
North Louisiana	41,740	42,000
Arkansas	49,780	50,970
North Central Texas	91,203	93,016
Texas Panhandle	54,040	56,475
East Central Texas	40,955	40,735
Kansas	108,210	108,520
Total Mid-Continent area	1,074,828	1,095,475
Gulf Coast	178,575	180,160
Southwest Texas	86,415	92,165
Eastern	109,000	110,000
Rocky Mountain area	102,119	100,024
California—		
Santa Fe Springs	74,500	76,750
Long Beach	93,500	97,000
Playa Del Rey	39,000	44,000
Elwood	28,000	30,000
Ventura Avenue	45,000	45,000
Kettleman Hills	23,500	23,500
Remainder of State	235,000	250,000
Total California	538,500	566,250
Total United States	2,089,437	2,144,074

→ **Decrease 54,637 Bbls. Daily** ←



Refinery Prices Start Year Unchanged

Better Feeling With Expectation of Higher Prices in Oklahoma. Some Grades of Natural Gasoline Weak

By C. O. Willson

The first few days of the new year brought a continuance of a steady market among Oklahoma (Group 3) refiners. Prices have not shown the upturn predicted by several but some of the weak spots have been eliminated and on the whole there is a better feeling among the sellers as to probable future developments.

On Monday and Tuesday, several refiners and marketers reported more activity both in contract business and spot sales. At the same time other sellers and buyers said that as much low priced material was available as at any time in the past month. This difference of opinion reflects a condition in which there have been no developments which would indicate definitely either a decline or an advance in prices.

Those who are confident that the close of the old year brought an end to a declining refinery market point to several favorable factors. Of greatest significance was the advance in tank car gasoline prices at refineries and terminals along the East Coast. This advance amounting to one-half to 1 cent a gallon is believed to mark the end of a price war situation which resulted in prices being reduced rapidly the latter part of 1930. So far as competitive conditions are concerned the advance has no direct significance to Oklahoma and other Mid-Continent refiners for the eastern prices are still low enough to exclude the competition of Mid-Continent gasoline which has to absorb freight rates of from 3 to 5 cents a gallon in shipments to eastern states. This situation, however, has prevailed for some time and the fact that the price slump has apparently been ended in a large refining and consuming area has encouraged many operators to believe that this development can be duplicated in the near future in the Mid-Continent and Middle West.

Favorable Factors

The same operators point to the crude oil and gasoline tank wagon situation as being more favorable than it was two weeks or a month ago. In regard to crude oil the available output in the Mid-Continent and country generally continues to show a steady decline and less of the "bootleg" crude oil is available. In this connection, the situation in North Texas is said to have materially improved leading to the conclusion that the low price operators in that area will be compelled to advance their prices in line with those established by companies paying the regular posted prices.

In the gasoline tank wagon end, led by the Standard Oil Co. of Indiana, major distributors have re-established normal prices at many points where local price wars resulted in retail price variations as great as 6 cents a gallon. This situation in December threatened to spread and force a general reduction in tank wagon and retail prices.

It is worthy of note in this connection that price cutting of 1 to 3 cents a gallon by independent jobbing interests is no longer objected to by many of the major distributors. As long as the spread is not in excess of 3 cents a gallon it is said that the gallonage of the large distributors with well established brands of gasoline and other products is not seriously affected. The price cutter usual-

(Continued on Page 120)

REFINED MARKET BAROMETER

A general advance in gasoline tank car prices at East Coast refineries and terminals gave the refinery market in United States the first definite upturn in prices in several months. This advance in the refinery market was accompanied by a return to normal tank wagon and service station prices at several large consuming centers in the Middle West. Gasoline prices in other refining groups were unchanged. Natural gasoline prices were reduced sharply in California and some grades continued weak in the Mid-Continent and Appalachian areas. Products other than gasoline for the most part started the new year at practically the same price basis as they closed the old year.

East Coast—Refinery gasoline prices advanced by all major companies. Considerable selling pressure in kerosene. Better demand for lubricants. More domestic inquiries for wax. Good demand for furnace oil. Export market dull.

Mid-Continent—Better feeling in refinery gasoline market. Some grades of natural gasoline continue weak. Fuel oils and kerosene quiet. Strong demand for low cold test and low flash gas oils. Lubricants and wax quiet.

California—Natural gasoline prices decline sharply due to some of the old contracts not being renewed. Fuel oil weak. Other products unchanged.

Pennsylvania—No important price changes. Fair demand for low cold test bright stock and neutral oils.

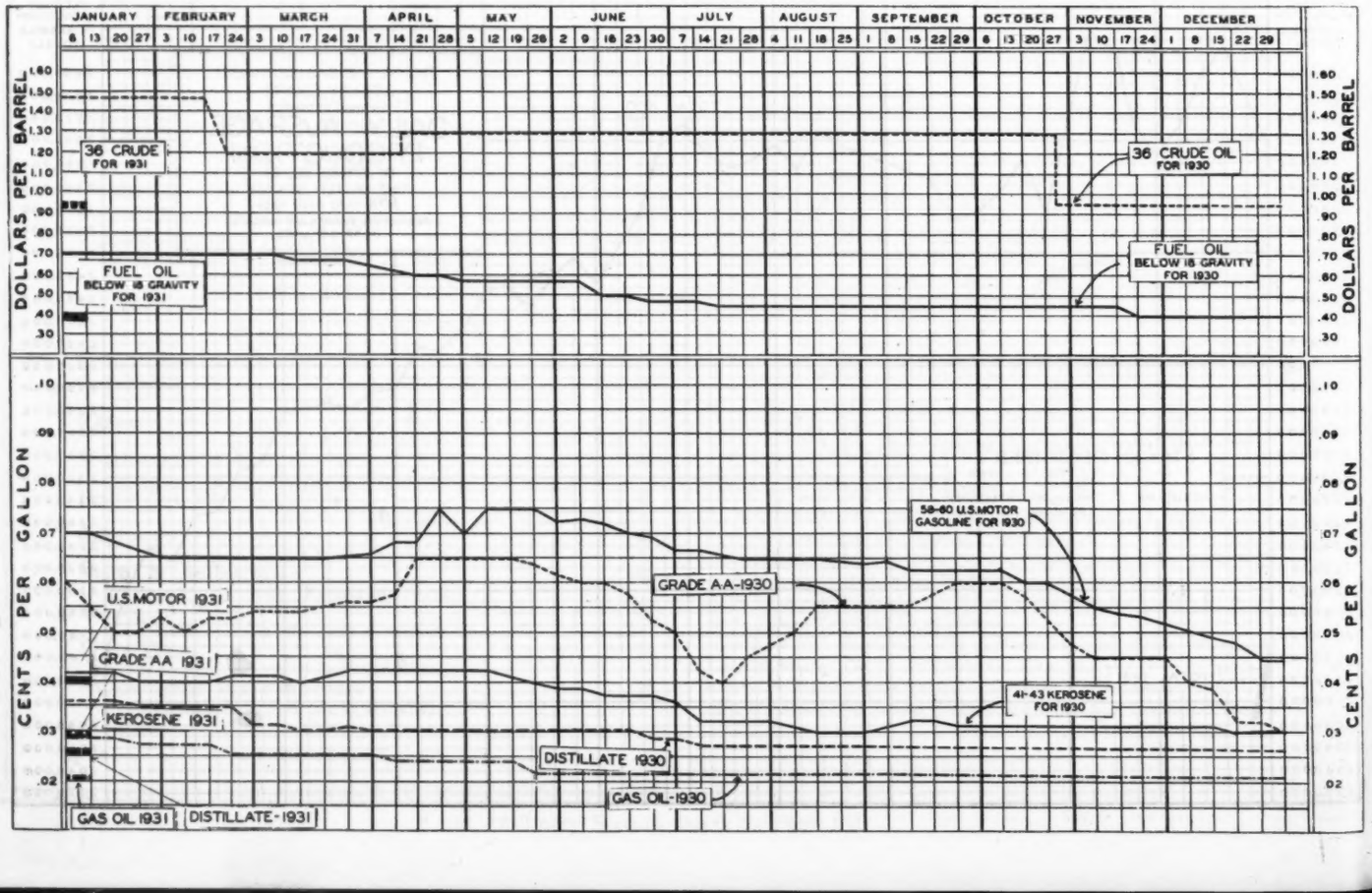
Chicago—Gasoline demand not as active as expected. Kerosene quiet. Strong demand for furnace oils. No change in fuel oils which continue quiet.

Gulf Coast—Improvement in demand for gas oil following reduction in prices. Heavy fuels slow. More active demand for gasoline.

MID-CONTINENT REFINERY OPERATIONS, NOVEMBER, 1930-1929.

	Gasoline production		Gasoline stocks End of month		Kerosene production		Kerosene stocks End of month		Fuel oil and gas oil Production		Fuel oil and gas oil Stocks end of month		Crude oil runs to stills (daily)	
	Nov., 1930	Nov., 1929	Nov., 1930	Nov., 1929	Nov., 1930	Nov., 1929	Nov., 1930	Nov., 1929	Nov., 1930	Nov., 1929	Nov., 1930	Nov., 1929	Nov., 1930	Nov., 1929
Okla., Kans., Mo.	4,855,000	5,312,000	2,908,000	3,249,000	587,000	781,000	697,000	1,071,000	2,575,000	3,083,000	5,331,000	4,761,000	277,500	322,960
Inland Texas	2,223,000	2,023,000	1,787,000	1,182,000	178,000	241,000	108,000	167,000	2,334,000	2,191,000	334,000	4,150,000	118,000	154,000
North La.-Ark.	661,000	770,000	276,000	253,000	57,000	84,000	21,000	46,000	693,000	1,147,000	815,000	1,066,000	51,770	63,860
Total	7,739,000	8,105,000	4,971,000	4,684,000	822,000	1,106,000	826,000	1,284,000	5,602,000	6,421,000	9,490,000	9,977,000	447,270	540,820

Data compiled from Bureau of Mines report.



Two Conferences to Study Conditions

Ten Governors Invited to Oil Relief Meeting and Service Commissioners of 26 States to Discuss Federal Control of Gas Lines

By Thomas F. Smiley

Acute conditions arising in the petroleum and natural gas industries have resulted in arrangements being made for two conferences at which many states are to be represented officially. Governors of 10 oil-producing states are expected to be represented at a conference to be held in Washington, D. C., January 15 to discuss plans for solution of various problems that face the industry. Twenty-six states are to be represented by their public service commissioners at a meeting in St. Louis, Mo., January 9, called primarily to discuss the proposition of putting transportation of natural gas under Federal control.

The call for the Washington conference was issued by Governor W. J. Holloway, of Oklahoma, and Governor Clyde M. Reed, of Kansas. The eight other States invited to send delegates are Arkansas, California, Colorado, Louisiana, Montana, New Mexico, Texas and Wyoming.

The Federal Oil Conservation Board was said to have indicated its readiness to co-operate in formulating some program of relief from troubles that beset the oil industry.

Governor Dan Moody, of Texas, was one of the first to reply to the call sent out by the Oklahoma and Kansas governors. He said he would participate gladly in the conference and began at once to prepare a list of 25 delegates to represent his State. The Texas delegation, Governor Moody said, would be made up largely of independent oil men, as these were the ones hardest hit by unfavorable conditions prevailing in the industry. There would be 20 oil operators and five "citizens at large" in the delegation, the governor said.

Others to Be Present

Governor J. E. Erickson, of Montana, although unable to attend in person owing to the fact that the Montana legislature is in session, said he would confer with W. M. Fulton, president of the Independent Refiners Association, before designating delegates from his State. Governor Harvey Parnell, of Arkansas, was awaiting the return of Parker Ewing, state conservation commissioner to Little Rock before naming his delegates. Governor Huey P. Long, of Louisiana, had not yet acted early this week on the invitation to send 20 delegates to the conference and had not indicated definitely his intentions. It was indicated that Governor Frank C. Emerson, of Wyoming, would be represented, but he had not taken official action early this week. Several of the governors receiving the call were reported to have taken the proposition under advisement, with the probability that they would take part.

In issuing the call for the Washington conference Governors Holloway and Reed predicted abandonment of 300,000 oil wells in the absence of relief action. Their message also urged aid to the oil business as a relief to unemployment, other interlocking industry and agriculture. They said increasing free imports of petroleum products had absorbed domestic markets.

Secretary of the Interior Wilbur, who is chairman of the Federal Oil Conservation Board, said when asked for a statement regarding the forthcoming conference: "I know nothing about the conference of January 15 except what I have seen in the press. Nothing has been taken up here so far as I know with the Oil Conservation Board. I assume if they wish to get down to cases they will want to take up the problems we had before us at the Colorado Springs meeting, unless they are coming to Washington preliminary to influencing some form of legislation. I am interested in getting a market for the oil from the small wells in Oklahoma and Kansas."

The belief was expressed that President Hoover might ask that the conference be a continuation of the one which was held at his request in Colorado Springs, Colo., in June, 1929, to consider oil conservation. That conference adjourned without taking any definite action. The proposition which received major attention at the Colorado Springs meeting was that of an interstate compact, by the terms of which the states would adopt oil legislation regarded as necessary, with the Federal Government co-operating in the formulation of policies.

No Spectacular Investigation

Secretary Wilbur recently stated that the Federal Oil Conservation Board had no intention of initiating any spectacular investigation into the action of the Prairie Oil & Gas Co. in ceasing to be a crude oil purchaser and thus leaving hundreds of small operators in Kansas and Oklahoma without an outlet for their oil. He set about to obtain full information regarding the conditions created by the Prairie's move, however, and no doubt is expressed concerning his willingness to give the Washington conference every aid in his power.

"There is a difference between an investigation and an inquiry," Secretary Wilbur said recently regarding his action in obtaining the facts about the plight of the small operators in Kansas and Oklahoma. "Our inquiry is to ascertain the facts in the case. We are trying to see what we can do to remedy these difficulties. But we cannot force any company to purchase oil at the cost of production when it is selling at less than that cost.

"Most people do not know they are walking on quicksand until they sink into it," he added, and then commented on the admonitions of the oil board a year and a half ago when it cautioned the industry against overproduction.

"We proposed at the Colorado Springs conference that there be uniform state laws to control drilling and eliminate waste by a compact between the states so that producers in the several states might play fair with each other. The proposed compact brought this problem within the domain of Congress. It is there now. We were without authority. It is all within the police powers of the states. You have seen the decision of the courts in California which declares that the oil does not belong to the producer until it has been brought to the surface. The State is so given power to prohibit waste."

Montgomery Sponsors St. Louis Meeting

Clinton H. Montgomery, member of the Kansas Public Service Commission, sponsored the call for the St. Louis meeting to consider federal control of natural gas lines and distributing companies. Pipe line companies are spending millions of dollars to carry natural gas from enormous reserves in Texas and Kansas to eastern points for distribution, in some cases more than 1,000 miles from the source of supply. New territory being entered by the natural gas lines includes Minnesota, Iowa, North Dakota, South Dakota, Illinois, Indiana and Nebraska. Members of the Missouri and Kansas public service commissions say they will lay before the commissioners from other states attending the St. Louis meeting problems that have arisen out of these vast transportation enterprises.

It is understood that the public service commissioners will consider subjects other than federal control of pipe lines. Some of these men present will be from states which are on the edge of the natural gas distributing areas and are potential fields for development by pipe line companies and their affiliated distributing systems. It is assumed that the men from these states will want to hear about the difficulties which it is asserted have confronted states which have passed through disputes over rates for gas.

Mr. Montgomery and his fellow members of the Kansas commission, with the legal staff of the body, prepared the draft of a bill placing interstate gas pipe lines under federal control. This bill, later introduced in the United States Senate by Senator Arthur Capper of Kansas, is expected to be center of much of the discussion at the St. Louis meeting.

Invitations to be represented at the St. Louis meeting were sent to every state in the union, and the following 26 have accepted the invitation: Arkansas, Colorado, Iowa, Illinois, Indiana, Kentucky, Kansas, Louisiana, Missouri, Minnesota, Montana, Maryland, Mississippi, New Mexico, North Dakota, Nebraska, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, West Virginia and Wisconsin.

Bill Confers Wide Powers

The bill by which it is proposed to put interstate transportation of natural gas under Federal control, introduced into the Senate last month by Senator Capper, looks to the creation of a Federal gas pipe line commission whose powers would be even wider than those of the Interstate Commerce Commission. The commission, of three members, appointed by the President, would have almost complete control over all phases of the natural gas industry so far as it is engaged in interstate commerce. Those who have studied it say it would curb further extension of the vast pipe line system which already connects the gas fields of Louisiana, Texas and Oklahoma with many of the nation's larger cities.

Under the provisions of the Capper bill the commission would have full power, authority and jurisdiction to supervise and control the purchase, production, distribution, sale and transportation of natural or artificial gas by interstate pipe lines. Not only would new companies seeking to engage in this business be required to obtain a certificate of public convenience and necessity from the commission, but that body would be empowered to investigate any complaints regarding rates lodged against companies already in existence, and if it elected to do so it could make investigations of this sort on its own initiative.

Controversies over gas rates in Wichita and Kansas City, Kans., and Kansas City, Mo., are said to have had much to do with bringing interstate transportation of this fuel into the foreground as a subject of wide discussion, culminating in the call for the St. Louis meeting. The dispute in these cities, as in many others, centers upon the practice of gas companies of charging a much lower rate for gas delivered for industrial use than is charged for gas delivered at the "city gate" for domestic consumption.

INSTITUTE WILL CONSIDER PLIGHT OF OKLAHOMA-KANSAS PRODUCERS

By James McIntyre

Buyers have not been found for the 14,500 bbls. of oil produced daily in northeastern Oklahoma and eastern Kansas, which lost its market on January 1 when the Prairie Oil & Gas Co. withdrew as a purchaser of crude oil in the Mid-Continent.

The relief committee representing other purchasing companies made a proposition to the Prairie Oil & Gas Co. in which they agreed to purchase as much oil from the Prairie Oil & Gas Co. as the Prairie would purchase in the distressed fields of the two states. W. S. Fitzpatrick, chairman of the board of directors, replied to this proposal, but at the meeting at which Mr. Fitzpatrick's reply was read and discussed it was decided that the Prairie "had not met the issue" and that the situation remained unchanged and was yet open for consideration.

Upon reading Mr. Fitzpatrick's reply and receiving the committee's report, E. B. Reeser, president of the American Petroleum Institute, announced that the whole matter would be referred to the board of directors of the institute at its meeting on Thursday, January 8, in New York.

Meanwhile the committee of purchasers and the committees representing the producers of oil in the old fields have been trying to work out the problem without the aid of outside agencies.

While the Prairie Oil & Gas Co. withdrew as a purchaser from all fields, no alarm has been felt for the fate of the wells in the newer and larger fields. It is taken for granted that these wells will be taken care of by other buyers in their respective fields. Anxiety has been felt only in the case of the very old fields in eastern Kansas and in a few northeastern Oklahoma counties where the Prairie was either the only buyer or the predominant one. The relief committee representing other purchasers has dealt only with these wells which produce on an average less than 1 bbl. per day per well.

It has been impossible up to this time for the Prairie Oil & Gas Co. and the other purchasing companies to view the situation alike. The Prairie organization offered the use of the Prairie Pipe Line Co. to gather the oil and deliver it to the lines of the buyers, also offering to continue to keep account of the oil thus run and to mail checks to the producers, asking for the service 20 cents per barrel gathering charge and 10 cents per barrel bookkeeping or marketing charge. This was not satisfactory to the other purchasers, who considered the 30 cents charge over and above the posted price as constituting a heavy premium, and they made the counterproposition to buy as much oil from the Prairie's own production as the Prairie would buy in the old fields under consideration.

President Reeser, before leaving Tulsa for New York, expressed the hope that the directors of the institute could find a way of satisfactorily handling the situation. Among the directors are the heads of all the companies represented on the relief committee by local officials.

President Nelson K. Moody of the Prairie Oil & Gas Co. issued orders late in December that commencing January 1 no oil be run from Prairie leases where they offset properties that were without pipe line outlet by reason of the Prairie's withdrawal as a car buyer and marketer of crude oil.

Indiana's Statement

On Tuesday, January 6, the Standard Oil Co. of Indiana issued the following statement indicating its attitude:

"Without waiting for termination of negotiations for relief of stripper well

(Continued on Page 115)

Refinery Operations Continue Steady

Mid-Continent Operators Start New Year With Practically Same Plant Basis as in December. Less Than Year Ago

By W. T. Ziegenhain

Refinery crude runs will remain practically unchanged in the Mid-Continent during January compared with the past month and will continue at the lowest level since April, 1928. The total average daily crude runs for January of this year is shown as 477,170 bbls. while the average for December was 478,360 bbls. The curtailing of operations is more clearly seen in comparing the present with those of a year ago at which time they totaled 535,460 bbls. or 58,000 bbls. more than refined at present.

This move is taken as significant of the Mid-Continent refiners' desire to enter the early summer without the burden of excessive stocks. The past year has shown the fallacy of building up large stocks of gasoline in anticipation of the heavy demand during the summer and early fall months reducing these stocks to the desired point and also absorb the current production. It is apparent that refining operations have become sufficiently flexible and the respective refinery capacities adequate in all areas, to take care of any normal increase in the demand without storing large quantities of the finished material.

RUNS TO STILLS AT MID-CONTINENT REFINERIES

1929	
January 1	508,550
February 1	506,800
March 1	514,950
April 1	530,530
May 1	577,500
June 1	585,030
July 1	565,800
August 1	555,250
September 1	552,300
October 1	544,720
November 1	545,473
December 1	540,630
1930	
January 1	535,460
February 1	519,355
March 1	531,500
April 1	555,250
May 1	574,300
June 1	572,250
July 1	548,475
August 1	526,400
September 1	498,710
October 1	518,830
November 1	506,700
December 1	478,360
1931	
January 1	477,170

Oklahoma

Oklahoma refineries have held to practically the same schedule of runs as established last month, the difference being a decrease of 650 bbls. Several plants which were shut down during December will resume operations in January but the effect of these will be absorbed in the lesser runs at other plants. Included in the several plants resuming operations are the Capital City Refining Co. at Oklahoma City, Peacock & Peveto Refining Co. at Oklahoma City, and the Yale Oil Corp. at Yale. One refinery has been temporarily shut down which operated during December, namely the Texas Pacific Coal & Oil Co. plant at Wynnewood.

The only major construction work now under way is the completion of a new 5,000-bbl. combination topper and vacuum still at the Empire Oil & Refining Co. plant at Ponca City. This along with a new bright stock plant will be completed within the next 45 days and will provide a total crude capacity for this plant of 11,000 bbls. daily.

Kansas

Kansas showed the largest decrease in refinery operations for the month, the January runs being shown as 77,550 bbls. compared with 82,950 bbls. last month. The decrease resulted principally from the lesser runs in the Skelly Oil Co. plant at Eldorado. Except for this change and slight reductions made in a few others of the list, the refining operations will remain unchanged.

North Texas

Although several major changes have been made in the crude runs of plants in the North Texas area, the total will remain about the same as last month. There was no change in the status of operating and shut-down plants except that the Superior Refining Co. has resumed operations at its Tiffin refinery. There is an apparent tendency for a number of plants to run a larger volume of crude during the first part of the month than the established average for the month and several plants anticipate shutting down over the last half or quarter of the month. The Simms Oil Co. is operating its Dallas refinery on a 15-day per month schedule.

West Texas

Except for the resumption of operations in the Del Rio plant of the Marathon Oil Co. following a fire, there will be very little change in the operations of this section during January compared with December. This plant was recently acquired from the Del Rio Refining Co. by the Marathon along with a number of marketing facilities in the close proximity of the plant as part of the company's plan of expansion.

North Louisiana and Arkansas

The North Louisiana and Arkansas group of refineries has increased its runs slightly, the principal change being in North Louisiana where 3,200 bbls. have been added to the total schedule. This increase was not the result of any material change in any one plant but reflect slightly increased runs in a large number. There was no change in the status of the operating and shut-down plants. In this group, the plant known as the Dixie Oil Co. refinery at Superior, La., has been changed to the Stanolind Oil & Gas Co.

MID-CONTINENT REFINERY OPERATIONS

(Based on operations January 1, 1931, and December 1, 1930)

Districts—	No. of plants Jan. 1	Daily crude cap. (bbls.) Jan. 1	Daily crack. cap. (bbls.) Jan. 1	Plants oper. Jan. 1	Runs to stills Jan. 1	Plants oper. Dec. 1	Runs to stills Dec. 1	Daily decrease
Arkansas	9	47,800	16,750	9	26,150	9	25,300	*850
Kansas	15	142,000	77,400	14	77,550	14	82,950	5,400
North Louisiana	6	59,250	21,000	4	26,800	4	23,600	*3,200
Oklahoma	51	330,300	117,050	41	181,450	38	182,100	650
North Central Texas	40	186,900	34,750	38	108,690	36	107,050	*1,640
West Texas	32	151,300	44,700	25	56,530	24	57,360	830
Total	153	917,550	311,650	131	477,170	125	478,360	1,190

*Increase.

REFINERY OPERATIONS IN OKLAHOMA

(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Jan. 1	Runs Dec 1
Anderson-Prichard Oil Co., Cyril	5,000	4,000	4,000
Barnsdall Refineries, Inc., Barnsdall	6,000	1,500	3,600
Barnsdall Refineries, Inc., Okmulgee	10,000	1,500	3,000
Bell Oil & Gas Co., Grandfield	4,500	1,600	1,500
Black Gold Refining Co., Oklahoma City	1,500	600	600
Capital City Refining Co., Oklahoma City	2,500	1,000	(*)
Champlin Refining Co., Enid	16,000	13,000	13,000
Citizens Refining Co., Seminole	1,000	(*)	(*)
Continental Oil Co., Sapulpa	10,000	1,500	1,500
Continental Oil Co., Ponca City	30,000	15,000	15,000
Crump Refineries, Inc., Oklahoma City	2,000	(*)	(*)
Cushing Refining & Gasoline Co., Blackwell	1,800	1,000	1,000
Cushing Refining & Gasoline Co., Cushing	3,500	1,800	1,200
Deep Rock Oil Corp. (Shaffer), Cushing	10,000	10,000	10,000
Eason Oil Co., Enid	5,000	3,000	1,300
Electrol Refining Co., Oklahoma City	3,000	(*)	(*)
Empire Oil & Refining Co., Cushing	5,000	(*)	(*)
Empire Oil & Refining Co., Okmulgee	4,000	4,000	4,000
Empire Oil & Refining Co., Ponca City	8,000	7,000	7,500
Garber Refineries, Inc., and Omar Refining Co., Garber	3,500	2,300	2,300
Globe Oil & Refining Co., Blackwell	7,500	5,000	5,500
Globe Oil & Refining Co., Cushing	15,000	5,500	6,000
Gulf States Corp., Oklahoma City	2,500	1,750	(*)
Illinois Oil Co., Cushing	3,000	(*)	(*)
Imperial Refining Co., Ardmore	5,000	(*)	(*)
Johnson Oil Refining Co., Cleveland	6,000	5,000	5,000
Mid-Continent Petroleum Corp., West Tulsa	40,000	19,000	19,000
Marathon Oil Co., Boynton	2,500	2,000	1,800
Marathon Oil Co., Bristow	5,000	3,000	3,500
Northwestern Refining Co., Tonkawa	3,000	(*)	(*)
Peacock and Peveto Refining Co., Oklahoma City	3,000	600	(*)
Peppers Gasoline Co., Covington	1,000	700	700
Phillips Petroleum Co., Okmulgee	5,000	3,300	3,300
Producers Oil Co., Bristow	2,500	1,300	1,300
Producers & Refiners Corp., West Tulsa	6,000	4,000	4,000
Pure Oil Co., Ardmore	5,000	2,000	2,000
Pure Oil Co., Muskogee	9,000	6,000	6,000
Rock Island Refining Co., Beckett	3,500	3,000	3,500
Sinclair Refining Co., Muskogee	1,000	(*)	(*)
Sinclair Refining Co. (Pierce), Sand Springs	8,000	6,500	6,500
Sun Oil Co., Yale	5,000	4,500	4,500
Sunray Oil Co., Allen	3,000	3,500	2,300
The Texas Company, West Tulsa	15,000	14,000	15,000
Texas Pacific Coal & Oil Co., Wynnewood	2,500	(*)	1,800
Tidal Oil Co., Drumright	15,000	10,000	9,000
Western Oil Corp., Beckett	2,000	1,200	1,500
Wewoka Refining Co., Wewoka	2,000	300	300
White Oak Corp., Allen	8,000	5,000	5,050
Wilcox Oil & Gas Co., Bristow	5,000	2,500	2,500
Wirt Franklin Petroleum Corp., Ardmore	4,000	2,500	2,500
Yale Oil Corp., Yale	1,000	500	(*)
Total	330,300	181,450	182,100

REFINERY OPERATIONS IN WEST TEXAS

(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Jan. 1	Runs Dec. 1
Amarillo Producers & Refiners Corp., Pyote	3,000	(*)	(*)
Big Spring Refining Co., Big Spring	2,500	1,200	1,250
Big Lake Refining Co., Big Lake	2,000	(*)	(*)
Bluebonnett Oil Refining Co., Wickett	5,000	(*)	(*)
Burford Oil Co., Pecos City	6,000	4,500	4,500
Coltex Refining Co., Colorado	10,000	6,200	6,300
Cockrell-McElroy Co., Kingsmill	3,000	1,800	400
Cosden Oil Co., Big Spring	15,000	6,000	6,000
Deer Oil Corp., Brownwood	2,000	(*)	500
Deer Oil Corp., Luling	2,500	(*)	2,000
Marathon Oil Co., Del Rio	5,000	2,000	(*)
Grayburg Oil Co., San Antonio	6,000	1,200	2,000
Great West Refining Co., Big Spring	8,500	2,500	2,700
Gulf Oil & Refining Co., Sweetwater	5,000	5,000	5,000
Humble Oil & Refining Co., San Antonio	5,000	1,770	2,350
Humble Oil & Refining Co., McCamey	15,000	4,000	4,300
Magnolia Petroleum Co., Luling	3,000	3,000	2,800
Misko Refineries, Inc., Laredo	1,500	500	500
Mid-Tex Refining Co., Midland	2,500	(*)	(*)
Pasotex Petroleum Co., El Paso	10,800	8,000	8,000
Pecos Valley Refining Co., Pyote	8,500	(*)	(*)
Pioneer Oil & Refining Co., Somerset	1,500	700	700
Richardson Refining Co., Big Spring	6,000	(*)	(*)
Rio Grande Oil Co., El Paso	6,000	2,100	2,000
San Angelo Refining Co., San Angelo	2,000	200	200
Sweetwater Oil & Refining Co., Sweetwater	2,000	(*)	(*)
The Texas Company, San Antonio	3,000	2,500	2,400
The Texas Company, El Paso	2,000	1,500	1,500
Tonkawa Petroleum Co., Pyote	5,000	400	500
Texas Mexican Oil & Refining Co., Laredo	1,000	500	500
Texas Petroleum Products Co., Somerset	1,500	700	1,000
Wickett Refining Co., Wickett	2,500	160	160
Total	151,300	56,530	57,360

*Shut down.

REFINERY OPERATIONS IN KANSAS

(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Jan. 1	Runs Dec. 1
Barnsdall Refineries, Inc., Wichita	4,000	1,500	1,700
Derby Oil Co., Wichita	7,500	4,000	4,500
Eldorado Refining Co., Eldorado	3,500	2,500	2,200
Golden Rule Refining Co., Wichita	1,500	750	800
Kanotex Refining Co., Arkansas City	10,000	5,000	5,000
National Refining Co., Coffeyville	6,500	5,000	5,000
Peerless Oil Refining Co., Chanute	3,000	(*)	(*)
Phillips Petroleum Co., Kansas City	6,000	5,000	5,000
Shell Petroleum Corp., Arkansas City	22,000	14,000	14,000
Sinclair Refining Co., Coffeyville	12,000	9,000	9,000
Sinclair Refining Co., Argentine	9,500	5,000	5,000
Skelly Oil Co., Eldorado	23,000	9,800	13,500
Standard Oil Co. of Kansas, Neodesha	20,000	7,000	8,000
Vickers Petroleum Co., Potwin	3,500	2,000	1,750
White Eagle Oil Corp., Augusta	10,000	7,000	7,500
Total	142,000	77,550	82,950

(Continued on Page 112)

Oil Industry Getting Its House in Order

Leaders Comment on the Present Situation, Measuring Progress Achieved During the Past 12 Months

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Jan. 5.—Notwithstanding the many discouraging aspects of the petroleum industry during the year just ended, the industry enters 1931 in an encouraging position, having benefited from the lessons learned during 1930, according to the views of a number of oil company executives expressed in statements commenting on conditions in the industry.

Overexpansion has taught the petroleum industry a lesson that should be productive of much good during 1931, according to W. C. Teagle, president of the Standard Oil Co. of New Jersey, who feels that at last the industry is getting its house in order. "The refiner," said Mr. Teagle, "has been advised by a committee of economists named by the Federal Conservation Board to make a still further reduction in refinery runs. The distributor faces a need to reduce costs and this should mean a stop to the further duplication of service stations. With all divisions of the industry co-operating along these lines there will be created the means of progress when the business depression passes.

"As to production, very real advances have been made in adjusting the affairs of this end of the business. A measure of the success attained can be seen in the fact that in 1930 there was a reduction of 31,000,000 bbls. of crude oil and products in storage, whereas without self-regulation the producers could have doubled the 1929 output.

"While the success of the refineries in restrictive measures has not been as marked, there has been some progress, a reduction of about 20 per cent having been accomplished in 1930 compared with 1929. Lately, the refineries have run at around 62 per cent of capacity, while 83 per cent was the high mark of 1929. The refiner is an important figure in the present situation, for in order to guard 1931 earnings there must be no overproduction of gasoline for the remainder of the winter. To accomplish this there must be a still further curtailment in operations at the refineries.

"Not only crude but also all petroleum products are selling at prices that reflect the overproduction. These prices will improve with the bringing of supply more closely into line with market demand. Meanwhile economy and retrenchment are necessary.

"With some 1930 figures estimated the comparative statistics for the last two years in the petroleum industry follow:

"Domestic crude production for 1930, 908,781,000 bbls.; last year, 1,001,702,000 bbls.; reduction, 92,921,000 bbls. Daily production in January, 1930, 2,639,531 bbls.; in December, 2,256,000 bbls.; reduction, 383,531 bbls.

"Domestic drilling was reduced. There were completed 21,000 wells in 1930, against 25,991 in 1929. There were drilling on December 1, 3,346 wells as against 4,468 at the end of 1929. Stocks of crude and products still are excessive. With the reduction noted, the total is 859,147,000 bbls. Gasoline stocks total 40,672,000 bbls."

Seubert Optimistic

Edward G. Seubert, president of the Standard Oil Co. of Indiana, looks for improvement in business conditions during 1931. "In dismissing 1930," says Mr. Seubert, "it is only fair to recognize that it has had some good features. Its adversities have brought out the real fighting capacity of industrial business. Leaders and workers alike have learned to apply their best thought and action to current problems. In consequence, wage levels have been for the most part maintained. Such unemployment as has, regrettably, developed is being met by relief and re-employment undertakings.

"Financial resources of our country remain large, although buying has diminished. The drift toward depression has been strongly resisted, and the resistance is apparently increasing. Sooner or later a turning point will be reached when fear and overcaution will be abandoned and living and spending on a normal basis will be resumed. Better times can then be anticipated.

"Although the antitrust laws prevent that concerted action through which some of the oil industry's problems could be solved most quickly and effectively, much progress has been made in 1930 through voluntary action on the part of individual producers and refiners. Production and crude runs are the lowest they have been for several years and refinery stocks are below 1929 levels.

"The curtailment program must still be carried forward. Unitization of pools will promote conservation and economical production, but it alone is not the solution for the problem of overproduction. New drilling must be avoided, and the output of existing wells must be continuously restricted to the flow necessary to meet current demand, or less.

"The outlook for keeping stocks down to the level recommended by the Committee on Petroleum Economics is so far very encouraging. The company I represent is doing its share in this respect. Our stocks of gasoline are at the present considerably below the total at the same time a year ago.

"The big problem the industry faces in 1931 is in connection with marketing. Although the code of ethics has accomplished much toward eliminating unfair methods it has not eliminated wasteful and unsound practices. If the industry is to be made to yield a fair return on the money invested in it, the same spirit of co-operation that has been applied to production and manufacturing problems needs to be shown in the selling end of the business.

"Our company intends to proceed on the theory that 1931 will be a better year, and we will do everything possible to encourage improvement. General adoption of this attitude should aid and accelerate the return to normal conditions which everybody wishes to see."

Dawes Sees Improvement

Henry M. Dawes, president of the Pure Oil Co., believes that the answer to 1931 will be written by the degree of success attained by the marketing division of the petroleum industry in adjusting itself to changed conditions.

"A few years ago," said Mr. Dawes, "President Coolidge appointed a committee from his cabinet to consider the apparent danger of a shortage in the supply of crude oil. At the present time this same committee is functioning on the matter of the proper handling of an excess supply. Superficially, these would seem to be exactly opposite objectives. Essentially, they are directed to the common end of conservation.

"If an unneeded amount of oil is currently produced from flush fields it results in many obvious physical losses and the establishment of a price scale which makes it impossible to operate small pumping wells, causing their abandonment and that of many old producing fields, which in the aggregate constitute sound reserves worth hundreds of millions of dollars.

"Since the appointment of this first committee the industry has made more progress along the lines of conservation and economic production than it had done in its whole history before. Its efforts have been supplemented by the passage of legislation in a number of states. The present crisis is created by the simultaneous discovery of a number of large fields. Similar situations have developed in the past, but a general co-operative effort has never before reached such proportions as the present one, and it will establish methods and principles which will put the industry permanently on a more stable basis.

"As in most other industries the proper adjustments are complicated and delayed by the action of a small minority. Most of the large producing areas seem to be fairly well under control, but the 5 or 10 per cent of the producers who cannot be co-ordinated with the general plan impair the effect of the whole movement. A few thousand barrels of oil sold at a cut rate to a small refiner, who sells it to an irresponsible marketer, demoralizes prices sometimes for hundreds of thousands of barrels and often results in more important refiners withholding their sales from the market until stocks are accumulated to the explosion point.

"The operation of the natural laws of supply and demand has been retarded by the use of complicated price schedules and the injection into retail marketing of practices which are properly applicable only to wholesale transactions. These irregularities and unnecessary complications result in a situation that prevents open marketing and which makes it difficult for the marketer to discover the actual conditions which competition requires. Through the use of a code for marketing the industry has eliminated many bad practices but until the large and small units of the industry are won over to the principle of one price and cash retail outlets that prevail in other industries, conditions in this department of the business will be slow in their improvement.

"In contrast with the practice of a few years ago, the last year in the oil business has seen the development of a remarkable disposition to work out policies through contacts and general discussion. This is in direct contrast to the intensive secrecy which was characteristic of the old time oil man, and because of it material progress has been made in the problems of balancing production with consumption and the general co-ordination of the industry.

"The code of marketing practices, for example, has and can accomplish only a fraction of what might be desirable, but it has brought about contacts and consultations which have been and must continue to be constructive. In spite of the very large potential production of oil at present, those efforts have resulted in keeping the producing situation at a point where the actual amount being brought to the surface currently is fairly well in balance with consumption.

Refiner in Important Position

"Great thought and effort is being concentrated on the refining situation. The importance of this is manifest, because all of the products of petroleum are in control of the refiner in their course from the well to the consumer. His disposition to retard or accelerate the production of crude is a powerful factor, and properly conducted, the operations of the refiners can exercise an almost controlling influence on marketing.

"For the first time there is a concerted effort to co-ordinate and synchronize the operations of the four great phases in the cycle of the petroleum industry—in

(Continued on Page 116)

BUREAU OF MINES PETROLEUM STATISTICS FOR NOVEMBER

According to reports received by the Bureau of Mines, Department of Commerce, the production of crude petroleum in the United States during November amounted to 68,174,000 bbls., a daily average of 2,272,000 bbls. This represents the sixth successive monthly decline in daily average production and is 73,000 bbls. below the October figure and 353,000 bbls. below the daily average of a year ago.

Of the major producing states, California was the only one that showed an increase in daily average production in November. Production in the Oklahoma City Field increased, but the output of the older fields of Oklahoma declined materially so that the daily average of the State decreased in November to 503,000 bbls., the lowest since September, 1926. Daily average production in Texas, the leading state, declined approximately 30,000 bbls. in November; practically all of this decrease occurring in the fields of north and north central Texas.

Field activity was materially curtailed in November. The number of oil wells completed amounted to 659, which compares with 866 for the previous month and 1,407 for November, 1929.

Although crude runs to stills were materially reduced in November, stocks of crude were again drawn on. Crude stocks east of California declined from 375,462,000 bbls. on November 1 to 373,965,000 bbls. on November 30, all of this decline occurring in refinery stocks. In California light crude stocks showed a slight decline but stocks of heavy crude and fuel oil showed a gain of slightly over 900,000 bbls.

Stocks of all oils continued to decline and on November 30 amounted to 672,806,000 bbls., a decrease from October of 1,488,000 bbls.

Refined products: Daily average runs to stills of domestic and foreign crude petroleum were again reduced in November, amounting to 2,344,000 bbls. as compared with 2,388,000 bbls. in October. The November figure represents a decline of 13 per cent from November, a year ago.

The daily average production of motor fuel amounted to 1,120,000 bbls., which represents a decline of 86,000 bbls. from October and is 11 per cent below November, 1929. The daily average indicated domestic demand for motor fuel amounted to 1,033,000 bbls., which compares with a daily average of 1,041,000 bbls. for the previous month and with 1,053,000 bbls. a year ago. Stocks of motor fuel reflected the curtailment in production, and the total, 38,705,000 bbls., represents an increase of only 21,000 bbls. over October. At the current rate of total demand, the November motor fuel stocks represent 34 days' supply, as compared with 31 days' supply on hand a month ago, and with 32 days' supply on hand a year ago. Daily average domestic demand for the majority of the other refined products increased in November and stocks were reduced.

The refinery data of this report were compiled from schedules of 349 refineries with an aggregate daily recorded crude-oil capacity of 3,658,550 bbls., covering, as far as the bureau is able to determine, all operations during November, 1930. These refineries operated at 64 per cent of their recorded capacity, given above, as compared with 355 refineries operating at 65 per cent of their capactiy in October.

Small Wells Need Not Be Abandoned

Study of Geological Features and Application of Modern Production Methods to Old Fields Will Permit Profitable Operations

By L. G. E. Bignell
Petroleum Engineering Editor

It has been stated that there are about 250,000 wells in this country that do not make a total daily production of 250,000 bbls. of oil, and might be considered as less than 1-bbl. wells. These small wells are found in every part of the country and in some areas they form the major portion of the production.

Companies operating wells of this kind have been forced to reduce expenses of all kinds to a minimum in order that the oil may be lifted, but in many fields it has been found that the price for the oil at the well is actually less than it costs to produce it.

Under these conditions it is hardly possible to still further reduce lifting and operating costs on these small wells and it therefore seems quite essential that some means must be found to increase the volume of oil obtained from these lean leases if the companies are to continue to operate these small wells.

This condition has been emphasized recently by the change of policy of the Prairie Oil & Gas Co. in cutting off connections to hundreds of these small stripper wells in northeastern Oklahoma and southeastern Kansas and companies operating in those areas have been facing serious problems, many of which are still unsolved.

It has been suggested by petroleum engineers and geologists that there are still locations that can be drilled profitably in this area where wells up to 100 bbls. per day initial production may be found, and by getting this added amount of oil it will give the companies an increased revenue that will help to maintain their organizations intact.

This suggestion might be met with a statement that we already have too much oil and why add to the burden by drilling wells to increase production in areas where there is now considerable distress oil that has no pipe line outlet.

Good engineering practice demands that every method known to the industry be put to use to drain these old areas of all possible oil before the wells are abandoned and it has been shown in the Bradford area of Pennsylvania that the water drive is increasing the recovery per acre and paying for the cost of equipment and labor.

In the Nowata Pool in northeastern Oklahoma it is reported that the use of vacuum has increased the production of old wells as much as 240 per cent. In other fields the injection of gas into the producing horizons has yielded additional oil and paid for the expense.

Recharging Old Sands

If the operators in these old fields will take into consideration the fact that there is a great deal of activity in the natural gas industry at this time, and main trunk lines are being laid to many of the larger cities and industrial centers of the middle and eastern parts of the country and that these lines will need gas for 10 to 15 years to come to pay out on their investments, it will be found that to waste natural gas in any area now is very unwise and uneconomical.

If the price of gas at the well is only 6 cents per 1,000 feet it will be found in most cases that gas can be compressed and recharged into old sands for less than that figure. Gas that is now being burned in flares, even though the amount thus destroyed is small at each lease, will in the aggregate amount to many hundreds of thousands of feet, and if stored in the sands will some day be valuable for fuel purposes.

It is not meant to imply that the main trunk lines will connect into these small scattered gas reservoirs at some later date and take this gas to eastern markets, but it is assumed that the gas will have value to help fill out the requirements of utility companies serving the cities and towns in the oil country, and in this way release for use in the larger eastern markets gas that they might otherwise require for these areas.

Not only will this gas be worth saving under such conditions, but it will be found in most pools that recharging the sands will help to drive oil to the output wells and increase production. This, of course, would be the first return on the cost of investment in equipment and operation of the compressor plants, but it is possible in many cases to actually store surplus gas in these depleted oil sands and if the wells are properly cased this gas should be available in the future.

Drilling Extra Wells

When many of the older pools in Oklahoma and Kansas were drilled there were many locations left untouched because of many circumstances that influenced the decision of the owners of the lease, and as it is now possible to take the logs of the wells drilled in these pools and make good structure maps it will be found in many places that extra holes can be drilled with good prospects of getting fairly good wells.

With the improved technique in drilling and production methods, and the advancement in petroleum engineering and geology it would seem that every area now occupied by small strippers would warrant close examination by men well versed in these professions, and their recommendations should be followed for it must be remembered that they are all schooled in the economic side of the oil business just as much as in the technical.

If it was considered good business judgment to go into the Oklahoma City area, for instance, and spend upward of $150,000 for a single well, why should it not be much more practical to drill a number of shallow wells in these older fields at costs ranging from $1.50 to $2 per foot to depths of not over 2,000 feet? If each well costs $5,000 and made a 10-bbl. pumper after it had reached its settled production stage, it would be a better paying investment in the long run than now seems likely in many of the leases in Oklahoma City Pool.

If the opening of new pools at great expense had been deferred and a small part of the money spent for increasing production from the older areas, it seems quite possible that these old fields could now be producing a much greater portion of the oil required and the immense reserve that has been built up, with a corresponding reduction in prices, would have been eliminated.

The desire to drill new areas is common both to the major companies and the individuals owning acreage but it cannot be denied that if restraint had been placed upon promiscuous wildcatting and more money and attention had been given to the older pools the industry would have been in better shape today. Nature has been bountiful in supplying pools of petroleum and if man had only been as careful in producing it and had taken advantage of the newer methods of production engineering greater recovery from these old sands would have resulted.

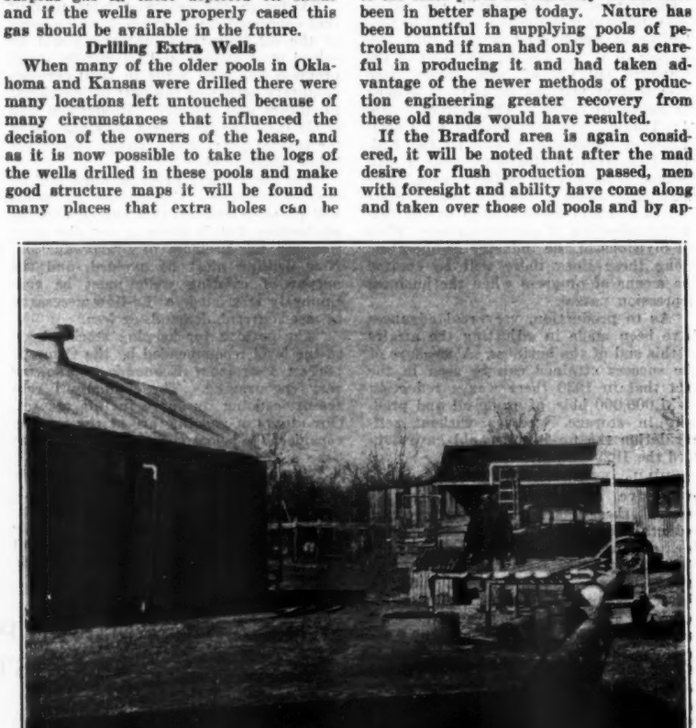
If the Bradford area is again considered, it will be noted that after the mad desire for flush production passed, men with foresight and ability have come along and taken over those old pools and by applying good engineering practice are now reaping good returns on their investments and will continue to do so for some time to come.

It, therefore, is not too late for the operators in Oklahoma and Kansas and other Mid-Continent areas to take heed of the past experience of the eastern operators and work over their old leases and either drill additional wells or increase the production from existing wells by repressuring and water flooding.

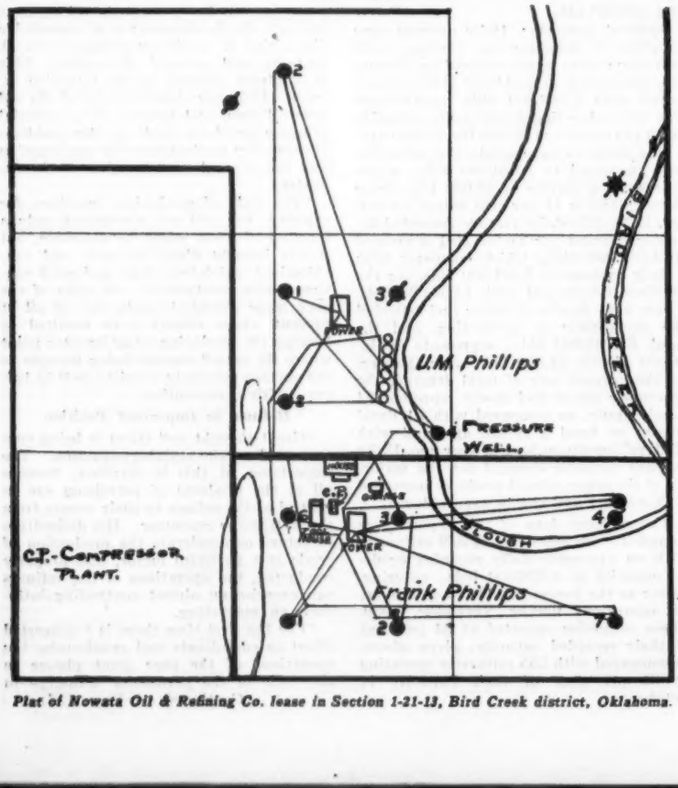
Example of Improved Methods

From the foregoing it is not to be implied that oil men in the Mid-Continent and elsewhere have not been doing a great deal to recover more oil from old pools and the many things they have done and are still doing would fill a large book. In their defense it can be said that if the oil industry had not attracted to it so many persons who desired to get rich quick, regardless of the effect upon the industry as a whole, the older operators' problems would have been fewer and they would have been able to devote much more time to working over old production and in that way kept the supply somewhere near the demand, without resorting to opening new pools which eventually caused the lowering of the whole price structure.

One good example of repressuring of a small lease is to be found about 12



Compressor plant and cooling coils on Nowata Oil & Refining Co. lease.



Plat of Nowata Oil & Refining Co. lease in Section 1-21-13, Bird Creek district, Oklahoma.

miles north of Tulsa in what is known as the Bird Creek-Flat Rock district, in Section 1-21-13, where the Nowata Oil & Refining Co. has a 100-acre lease with nine wells that are being produced under a gas drive.

This lease was drilled in 1920-21 and got its production in the Tucker and Burgess sands, as the Bartlesville sand was missing from this area. The wells were cased with about 50 feet of 10-inch for the surface string, and the hole then reduced for the 6⅝-inch casing which was set about 1,325 feet just above the Tucker production which is found at about 1,330 feet and is about 12 feet thick.

The interval between the Tucker and Burgess is about 100 feet, the top of the Burgess being at about 1,448 feet, and it also is about 12 feet thick. Below the 6⅝-inch casing the holes were not cased and production from the Tucker was permitted to accumulate in the bottom of the hole with the Burgess oil and 2-inch tubing was run to the bottom of the hole and is now used to produce the wells which are pumped with powers.

The lease is making an average of about 15 bbls. of oil daily and has maintained this output for the past two years. About two years ago the vacuum plant that was on the lease was taken off and a small compressor plant installed in its place.

This compressor plant is unique in many details. In the first place it did not cost over $3,000 to install and consists of a 25-horsepower Superior horizontal 2-cycle gas engine and two 6½x6-inch Vertical Worthington compressors which are run by two 4-inch belts from the flywheel of the gas engine. The machinery is installed in a small sheet iron covered building with concrete floor and is very compact.

The gas from the wells is first passed through a joint of 10-inch pipe 16 feet long, that has been "orange peeled" and welded at the ends to form an accumulator, and is fed to the engine and compressors through 2-inch pipes. The pipe is carried above the intake on the engine so that moisture from the wells will not pass over to the cylinder.

Novel Control Device

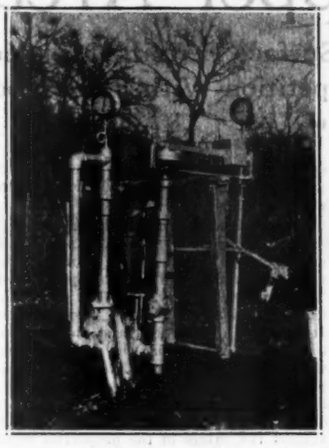
The cooling water for the engine cylinder is circulated by a small centrifugal pump belt driven from a small pulley set inside one of the engine flywheels, and if this belt should run off of these pulleys for any reason whatsoever, or the pump become plugged, the discharge from the engine jacket will cease to flow and this will shut down the engine by the operation of a novel control device.

This cut-off device consists of a valve set in the 2-inch gas line leading into the engine intake. To this valve stem is connected a lever and a weight, that is held up by an overbalance of water flowing into a bucket suspended over the wooden circulation tank for the cooling water. So long as the pump is working satisfactorily the stream of water from the exhaust from the water jacket on the engine keeps this bucket filled and the weight tied to the valve lever is held up, but if this flow of water stops the bucket will drain through a small hole in its bottom and the weight will pull the valve closed and shut the engine down by cutting off its fuel supply.

If either of the belts from engine flywheels to the compressors should run off it will merely result in the remaining compressor handling more gas, and as they have a combined capacity of about 150,000 cubic feet per day at 55 pounds pressure, and only 75,000 cubic feet daily is required to repressure the wells, one compressor can handle the load temporarily.

The compressors are taking gas from the header at from atmospheric to about 2½ inches of mercury vacuum, and the wells are held at about these same pressures. The gas is compressed to 55 pounds per square inch and is passed through a 2-inch coil where some gasoline is knocked out. This gasoline is sufficient to provide fuel for all company automobiles, and when it is necessary to clean out any of the wells, the company has a drilling machine rigged up with a gasoline engine from an old Fordson tractor that is used for the work, and this fuel is also available for it.

The cooling coils through which the compressed gas passes is kept warm in



Gas input well hook-up on Nowata Oil & Refining Co. lease.

the winter by heat from the exhaust from the engine which is passed under the coils through a joint of 8-inch pipe perforated its full length with ½-inch holes. By covering the top of the coils with old pieces of carpet enough heat is maintained around them to keep from lowering the temperature to a point where condensates will freeze and also to maintain the pressure of the gas at about 55 pounds at the input well.

Gas Input to Two Sands

There is only one gas input well on this lease and it is supplying the gas needed to produce nine wells. The well is cased to 1,325 feet with 6⅝-inch casing and the 2-inch string of tubing is run to 1,462 feet or the bottom of the well, and provided with a cap on the lower end with slotted openings opposite the Burgess sand for the escape of the gas.

At 1,422 feet the 2-inch tubing is packed off between the Tucker and Burgess sands with a 2-inch to 6⅝-inch 3-in-1 packer, and gas liberated at the lower end of the string of tubing will therefore enter the Burgess, or lower sand, only.

When this sand is charged to about 60 pounds pressure, or a little more than the normal pressure maintained at the compressors, a Northup boiler regulator is so rigged up in the line that it will open and by-pass the gas to a 1-inch line that is tapped into the casinghead and gas is then delivered into the 6⅝-inch casing and outside the 2-inch tubing into the Tucker sand.

This input well hook-up is shown in a picture accompanying this article and is very ingenuous and cost but very little to install. It is very sensitive in its operation and assures the maintenance of at least 55 pounds pressure on the Burgess sand at all times.

When this system was put into operation it was found that the gas cut across from the input well to well No. 2, one location to the west, in about 36 hours' time, and this indicated a channel or soft sand in that direction, so it has been the practice of the operator to maintain about 40 pounds pressure on No. 2 well at all times except when it is actually being pumped, when the pressure is reduced to 10 pounds. All other wells are shut in at about atmospheric pressure, that is, pressure does not build up in them in such a way as to register at the casinghead, and when they are produced they are relieved of all back pressure.

All wells are pumped by central powers and it takes from one to two hours per day to secure the production, so the gas that is being recharged into the sand is accumulating about 22 hours daily.

The cost of operating this compressor plant for November was $2 in addition to the wages paid the pumper on the lease. If the plant is credited with the gasoline made and used by the company cars it would actually show an earning capacity of several dollars per month.

Proposed Deeper Drilling

As these wells are now finished the bottom of the hole is in the Burgess sand, which rests directly upon the Mississippi lime. This lime is dry, at least in the upper portion.

In the Nowata district it is understood that many of the wells have been deepened into the Mississippi lime to form sumps or reservoirs for the oil below the level of the producing sand. The tubing is lowered into these deepened holes and the upper level of the oil is never permitted to reach the producing sand, as the rate of pumping is regulated to the flow of oil from the sand.

It is proposed to try this system on some of the wells in the Bird Creek-Flat Rock area for there the Burgess sand is directly on the Mississippi lime, and if the well is drilled into the lime, oil from both the Tucker and Burgess formations can drain into the sump and there will be no accumulation of oil over the sand.

This might seem like a small matter if it is contended that by filling up the hole above the producing sand will put some back pressure on the well, but if it is remembered that all of these wells have been shot and have fairly large cavities in the sands, it is possible to accumulate quite a little oil there and with a 10-foot head against the well put some back pressure on the sand and in this way retard production to some extent.

If the hole is deepened the oil will run down into it and should drain from the sand more freely. As there is pressure back of the oil due to the injection of gas into the sand there should not be a tendency for the sand to be clogged with paraffin at the face of the hole.

It is also suggested that using the additional depth of hole for such production would tend to remove from the well that tendency for the oil to deposit on the face of the sand the myriad of tiny gas bubbles that break on the surface of a body of oil as the gas that accompanies it passes out. This action can be seen at any time in storage tanks, and it must go on in the well, and this scum of bubbles will deposit on the face of the sand as the oil level is lowered, and whether it retards the flow of oil even temporarily, if it is eliminated by carrying the oil level below the sand face, it certainly can do no harm.

It is proposed to drill the hole deep enough to give it capacity to hold all the oil the well will make in 24 hours, plus 200 or 300 per cent, so that more than one day's production can be held in the well if necessary without raising the oil level to the sand.

Other Locations to be Drilled

This lease presents an excellent example of a property that might well be drilled further to secure increased production. At this time the company has reduced operating costs to a minimum, and with each cut in the price of oil the only adjustment in expenses it can possibly make is to reduce salaries paid to employes.

The equipment it has on the lease in the way of powers and compressor plant

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GEOLOGICAL SOCIETY OF AMERICA TO MEET IN TULSA IN DECEMBER

By L. G. E. Bignell
Petroleum Engineering Editor

At the annual meeting of the Tulsa Geological Society held in Tulsa, January 5, new officers for the ensuing year were elected. The reports of the officers who have served for the past year were made

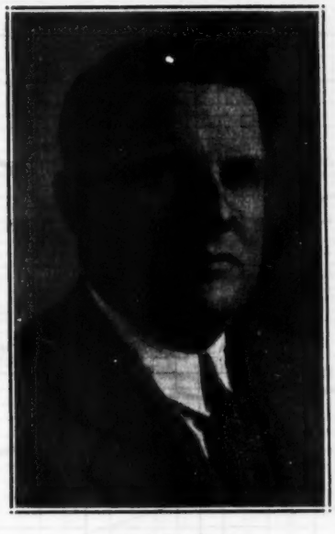
Russell S. Knappen
President

and accepted and show that the society has enjoyed a healthy growth during 1930.

Announcement was made at this meeting that the Geological Society of America will hold its next annual meeting in Tulsa some time during the last week in December, 1931. This will be a big event in the annals of the petroleum geologists who will act as hosts for the meeting and it is being looked forward to with much interest by all.

Russell S. Knappen, assistant to the vice president of the Gypsy Oil Co., Tulsa, was elected president of the Tulsa Geological Society, succeeding Frank R. Clark, chief geologist for the Mid-Kansas Oil & Gas Co.

Mr. Knappen graduated from the Ohio Wesleyan University in 1913, and secured his master's degree at the University of Wisconsin in 1915. He took additional work at the Columbia University in 1915 and 1917 for his doctor's degree. From 1913 to 1925 Doctor Knappen was with the United States Geological Survey on a part time basis. One field season took him to the Aleutian peninsula, southwestern Alaska, and his report on this region is contained in United States Geological Survey Bulletin 797-F issued in 1928.



Frank R. Clark
Retiring President and Member of Council

Doctor Knappen served overseas during the World War in 1917-18 and part of this time he was chief geologist of the second army and connected with general staff.

After the war he taught at Chicago, Kansas and Harvard Universities. In 1926 he joined the Gulf organization and

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Lifting Cost in Stripper Area Is Small

Expense of Raising Oil to Surface Permits Operation of Little Producers in Competition With Flush Pools

By James O. Lewis
Petroleum Engineer

A doubt exists in the minds of many oil men whether there is any economic justification for saving the small wells in the shallow fields of Oklahoma that have recently been left without a market. In general they have, for several years past, yielded little or no profits and, facing as they do, a long period of probable low markets and oversupply, the question is whether they should not be discarded along with other high-cost production that cannot stand the prices in prospect.

Were there no means known for operating these small wells in successful competition with the newer and larger wells which have caused oversupply, there would apparently be nothing to do but to abandon these old strippers as having exceeded their useful life, but it has been proved by the Delaware Consolidated Oil Co., that they can be operated below the costs of all but the exceptional flush pool, therefore they warrant serious consideration.

The Delaware properties were a group located in the Delaware extension pool of Nowata County which were consolidated in 1926 and since have been operated under repressuring. There are 350 active wells with average depth of 1,000 feet and averaging 1½ bbls. net daily. The condition of the properties when taken over represented a fair average for the shallow fields. They included some better than average properties and the usual proportion of "cats and dogs" none of which were abandoned. Besides putting in the pressure plant, it has been necessary to completely renovate the property, to recase every well, replace every power, redeck all tanks and fix all rod and lead lines, etc. This reclamation program is being completed this spring whereupon the property will have a life of many years with only minor maintenance. All of these improvements have been paid together with satisfactory dividends from earnings.

Producing Cost per Barrel

During recent months the production expenses of the Delaware Consolidated Oil Co. has averaged 40 cents per barrel. This includes everything but depreciation, depletion and Federal income taxes. It includes all overhead and also part of the cost of renovating the property and when this has been completed this spring, production expense can be held well below 30 cents per net barrel for a number of years. Depreciation and depletion against the values of the properties when taken over five years ago can be considered as a bookkeeping fiction but depreciation should be charged against the improvements since made that have been charged to investment. This is estimated at an additional 10 cents per net barrel.

Thus a group of representative properties have been placed in the position of recovering oil at a total cost of 40 cents a barrel including amortization of improvements and they are in condition to compete successfully for years against all but the exceptional property. Compare this cost of 40 cents with Seminole City where the development cost was 41 cents and the production expense 51 cents, a total of 92 cents per net barrel. Oklahoma City will doubtless show a still higher recovery cost and when all charges, lease costs and rentals, land and geological department expense, dry holes, overhead, taxes, development and lifting expense are charged off, it is certain that oil can be recovered from such old wells below average costs for the industry.

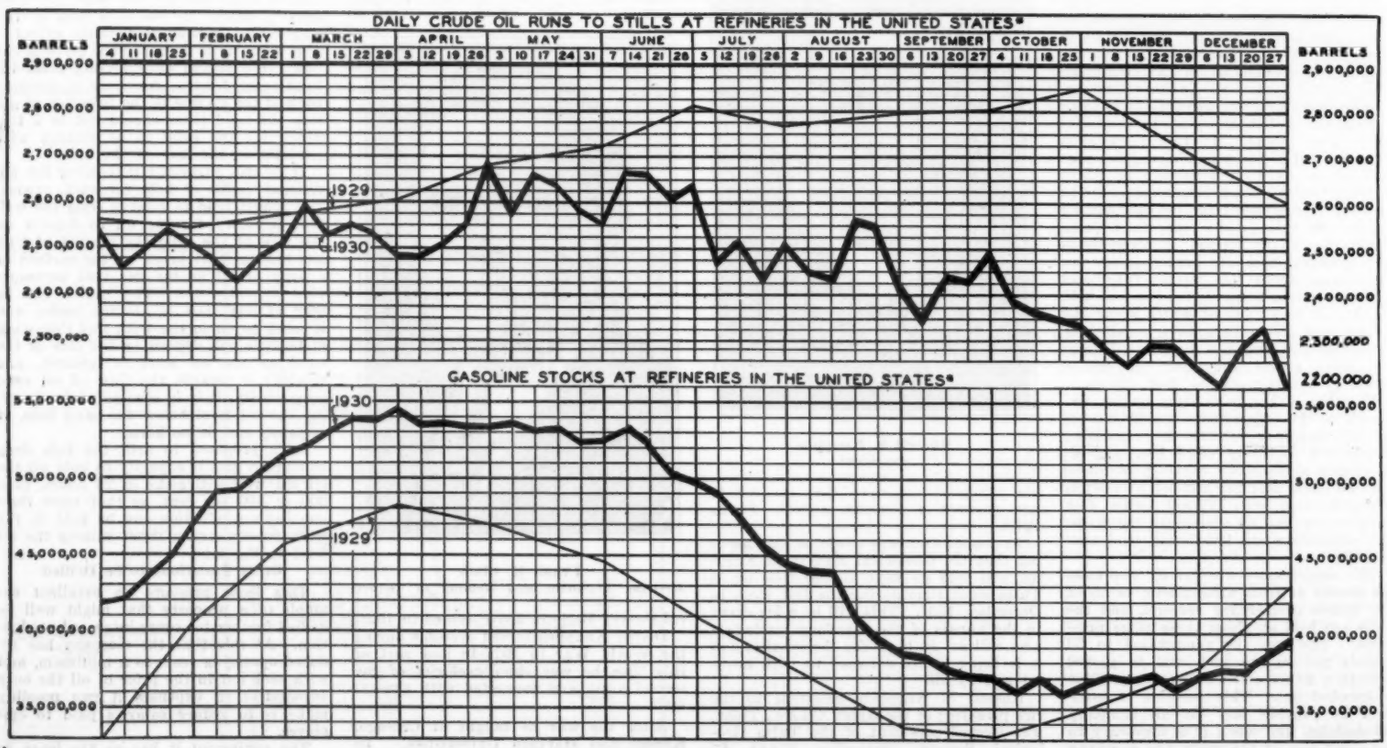
What has been done on the Delaware properties can be done in other shallow fields, therefore their preservation can be justified economically as well as upon the grounds of being innocent victims of circumstances which they did not create and could not prevent.

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending January 3.

	Week ending January 3				Week ending December 27				Week ending January 4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	441,900	5,868,000	9,501,000	100.0	458,000	5,780,000	9,957,000	100.0	454,857	5,998,000	7,431,000
Appalachian	93.8	78,400	1,051,000	1,050,000	93.4	77,600	1,005,000	1,044,000	91.6	75,571	1,282,000	805,000
Indiana, Illinois, Kentucky	97.5	237,300	4,542,000	3,462,000	91.9	242,400	4,489,000	3,547,000	93.6	289,800	5,483,000	3,505,000
Oklahoma, Kansas, Missouri	89.4	306,300	2,854,000	4,120,000	98.3	327,700	2,808,000	4,292,000	87.7	263,428	3,604,000	3,277,000
Texas	91.9	469,400	6,912,000	10,846,000	93.1	484,700	6,813,000	10,760,000	90.7	539,857	6,590,000	12,757,000
Louisiana and Arkansas	98.3	130,300	1,626,000	2,270,000	98.8	144,900	1,514,000	2,302,000	96.8	160,000	2,161,000	4,499,000
Rocky Mountain	33.1	33,600	1,689,000	1,002,000	93.1	29,300	1,642,000	996,000	93.3	41,614	2,273,000	973,000
California	98.8	498,100	15,338,000	103,873,000	98.8	532,800	15,337,000	104,017,000	99.3	642,857	14,826,000	109,770,000
Total United States	95.7	2,095,300	39,780,000	136,224,000	95.7	2,207,400	39,388,000	136,917,000	95.4	2,468,285	42,217,000	144,017,000
Texas Gulf Coast	100.0	359,600	5,519,000	8,133,000	100.0	366,700	5,279,000	8,064,000	100.0	429,585	5,579,000	10,792,000
Louisiana Gulf Coast	100.0	99,100	1,290,000	1,351,000	100.0	99,300	1,253,000	1,356,000	100.0	108,514	1,877,000	3,818,000

(1) Per cent of refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



*Data for 1930 based on weekly reports of the American Petroleum Institute. Data for 1929 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.

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THE OTHER SIDE

While the oil industry is striving to curtail overproduction what is it doing to enlarge consumption of its products?

Curtailment of output is, after all, a passive, or even a negative policy, implying simply keeping pace with demand.

It should be accompanied by an active, progressive policy aiming to develop and expand demand.

No major industry has greater possibilities in 1931. In contrast to the experience of practically every other major industry the oil industry during the year just closed had a 5 per cent increase in demand for its principal product, gasoline. The demand for its other main products ranged from 85 to 90 per cent of the consumption in 1929 while there was a large increase in specialty products.

Contrast that fact with the 40 per cent decline in the automotive industry, the more than 25 per cent decline in tire sales, the 25 per cent drop in pig iron, the 7 to 10 per cent decrease in department store business, 9 per cent loss in wholesale drug sales, 6 per cent drop in wholesale groceries, 18 per cent decline in wholesale hardware, and 25 per cent in wholesale drygoods trade. Cigaret sales which had been showing an annual gain of from 8 to 12 per cent dropped to a fraction of 1 per cent increase.

Or, to put it another way, contrast the gain in gasoline demand and the general ratio of sales of petroleum products in 1930 to other years with the fact that freight traffic was the lowest since 1921, steel production the lowest since 1924 and shoe production since 1921.

An industry which has been able to show a 5 per cent gain in its market under such abnormal conditions has no cause to fear 1931. So far as gasoline is concerned there is every reason to believe that this year's requirements will be at least equal to those of the past year with an increase in prospect for the latter half of the period if there is an improvement in general conditions.

Those in position to know in the automotive industry are predicting a 4,000,000 car and truck output for 1931 which will be an increase of 500,000 over the past year.

A recent estimate shows that during 1931 over $2,500,000,000 will be spent on road improvement by federal, state city and county governments.

Why should not the oil industry benefit in the consuming end from this tremendous expenditure to which it will contribute at least $600,000,000 in the form of gasoline taxes paid by the users of its product?

The improvement of present highways and the construction of new roads which this program involves means so much more travel opened to consumers of gasoline and motor oils. Pleasanter riding, new scenes, the extension of transportation by car and truck into sections hitherto inaccessible or practically so because of poor roads will inevitably mean wider travel and larger consumption of motor fuel.

The oil industry could not make a better investment than to set aside a proportionate sum for the stimulation of travel and greater use of cars as these new and improved highways are opened for traffic.

The motorist could be impressed with the fact that he is paying for these highways and ought to enjoy some return for his money. He could be shown what he is getting and the resulting increase in travel would be a progressive contribution to the return of prosperity which this road program was designed to aid. It would increase not only the demand for petroleum products, but would aid every related industry, the manufacture of cars, of tires, of steel, of glass and every interest which in any way depends upon the trade of the 26,000,000 motor car owners of the country.

The oil industry, in fact, should be the leader in the upturn of business since the demand for its products has been comparatively steady despite general conditions. With a broadened salesmanship, looking not alone to the developed market but to those that might be developed, it should point the path to a new prosperity.

The automotive field is not the only one. There are promising possibilities in the use of crude oil fractions as fuel for other than internal combustion engines. With our greater knowledge of the constituents of our products and newer methods developed in the manufacture of products the field has been enlarged.

One authority in the motor world has said that with the proper type of motor fuel which it is possible for the refining industry to develop it would be practicable to replace practically all the steam power used in transportation.

There is an immense field for the Diesel engine which, despite opinions to the contrary, does not imply the elimination of the demand for gasoline. The two fuels are not competitive and the use of both can be enlarged without injury to the other.

The cheapness of fuel oil, furnace oil, kerosene and other heavy products has widened their outlets although in this respect the industry has been inclined to wait for the burner manufacturers to bring in the business rather than going out to get it.

The specialty field is usually the most profitable, but in the oil industry it is only in its infancy, although the rapid technical development of the refining industry has discovered products which could be produced on a commercial basis if the demand for them was created.

In the sphere of aviation while there was a setback during the past year, partly due to general conditions and partly to exploitation which was misdirected, there are signs of the business being placed on sound lines with corresponding substantial expansion.

The oil industry can do a great deal to aid in the development of the airplane industry which will eventually become one of the largest consumers of petroleum products by research in the production of fuel and oil particularly adapted for airplane engines and by promoting the establishment of airports.

With the curtailment program releasing a certain amount of effort in the production end the oil industry could not do better than to transfer this activity to the development of consumption.

The oil business as an industry has only just started to realize the potentialities in the promotion of sales of its products. It has been said indeed that the oil industry has simply taken the business that was offered to it by other industries, which is largely true.

In this time of overproduction it should bestir itself to seek out new business instead of merely trying to limit itself to supplying a market it has outgrown.

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COUPLINGS DOMINATE

Water and Pipe Line Transportation

Rio Grande Company Lowers Costs in Movement of Crude Oil and Refined Products Through Correlation of Two Methods

By C. O. Willson

The Rio Grande Oil Co. of Los Angeles, Calif., which has rapidly expanded all phases of its operations during the past two years, has been able to make substantial reductions in operating costs through the correlation of water and pipe line transportation in the movement of crude oil and refined products.

The company, at present, is operating two refineries in California, the plants furnishing gasoline, kerosene, fuel oil and other products for distribution in California and other coastal states with large export outlets. One of these plants with a crude oil capacity of 12,000 bbls. daily is located at Vinvale, Calif., 22 miles from the Long Beach harbor. The other plant, which is leased from the Olympic Refining Co., is located in Long Beach but several miles distant from the harbor.

The Rio Grande company over the past two years has obtained the bulk of its crude oil supply from the Elwood Field where the company has large holdings. The field is located along the coast about 120 miles north of the refineries. It was not feasible to connect the field with the refineries by pipe line so the company management decided to develop a combination water transportation and pipe line system which would furnish not only an outlet for the crude oil but also enable the marketing department to transport refined products to coastal and export points with the lowest possible charges.

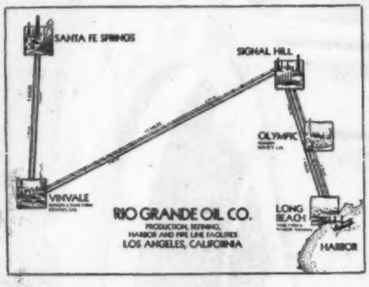
This plan last year resulted in the building at Long Beach harbor of what is said to be the fastest loading terminal (Figure 1) on the West Coast. The location of this terminal in relation to the company's refineries, crude oil production and natural gasoline output outside of the Elwood Field is shown in the accompanying map.

Marine Loading Line

At Elwood, the company developed a unique marine loading line (Figure 2) which was described in The Oil and Gas Journal at the time it was completed. Harbor of sufficient depth was not available at Elwood and it was necessary to provide loading facilities over a half mile from the shore. This was accomplished by laying 4,000 feet of 10-inch welded line connecting to crude oil storage tanks along the shore.

Connecting to the end of the steel line is over 200 feet of 8-inch rubber hose. When not in use the steel line has a closing plate bolted over the mouth so that no crude oil can escape. When a tanker is to be loaded, the line is opened connecting to the rubber hose which is raised by hoisting chains from the ocean floor, 65 feet below. The hoisting chains are manipulated from a floating buoy on the surface of the water.

The tankers while being loaded are moored to five mooring buoys so that the loading facilities are available at practically all times. A portable telephone system connects the shore operation to



the floating buoys. With all connections completed the tankers are loaded at the rate of 8,000 bbls. per hour. These facilities have been used almost two years, a total of approximately 16,000,000 bbls. of crude oil being loaded in tankers. It has only been necessary to replace the rubber hose connection once.

The Elwood crude destined for the Rio Grande refineries is generally loaded in tankers in ballast coming from northern points along the Pacific Coast, deliveries being made to the terminal at Long Beach. This terminal is reached either through the San Pedro harbor or through the open-water channel leading directly to the Pacific Ocean.

Long Beach Terminal

Built entirely of new material, the Rio Grande management was able to incorporate the latest developments in the design of oil terminals. It is located on a 14-acre tract in what is known as Channel No. 2. The main features are shown in the accompanying air view (Figure 1).

Over 1,000,000 bbls. of storage are provided at the terminal which connects directly to the storage located in the nearby fields and the two refineries. At the terminal are three large 40'x144' tanks, each having a capacity of 118,000 bbls. Four tanks have a capacity of 35,000 bbls. each, two 3,000 bbls. and three 1,000-bbl. tanks.

These tanks provide storage for gasoline, kerosene, fuel oil, Diesel oil, gas oil as well as the crude oil received at the terminals. These facilities are adequate so that mixing of products by interchanging tanks is never necessary. All products whether incoming or outgoing pass through these tanks for measurement.

Each of the storage tanks rests upon concrete which in turn is based on three rings of piles driven 40 feet into the earth. The tanks are surrounded by a fire wall 20 feet high and 14 inches thick.

Practically all loading and unloading is accomplished with motor-driven centrifugal pumps. For emergency use and to supply steam for boats at the wharves when needed, the company installed a 160 horsepower water tube boiler.

Two wharves are provided as shown in the picture. These wharves are sufficient to accommodate three average size tankers at one time or two of the largest tankers. Each wharf is equipped with derrick masts and booms for hoisting flexible connecting hose and for loading or unloading cargoes and supplies. The Rio Grande company is now shipping considerable gasoline and kerosene in cases from its Vinvale refinery. These are brought to the terminal in trucks on a hard-surface highway connecting to the plant. A railroad siding also connects to the terminal.

The housing facilities at the terminal provide for a laboratory where all products are finally tested before loading.

The wharves are connected to the offices and pumphouse by telephone. The electrically driven pumps are operated by switches located on the wharves. The remote control rack at wharf controlling all pumps and other phases of operation is shown in accompanying picture (Figure 3). Each discharge location (five sets) is equipped with remote controls. In the pumphouses in case of stoppage in line for any reason, the pumps are automatically stopped when a certain pressure is reached. With this arrangement the loading or unloading arrangement usually requires only two men.

In addition to the large tankers and and liners the wharves provide loading facilities for smaller boats. As is the case in other large harbors there is an increasing demand for gasoline, Diesel fuel and heavier fuels by various types of boats operating in the Los Angeles district. The Rio Grande has made special arrangements to serve these customers quickly at its terminal.

When needed, a fuel loading barge for supplying this small harbor craft is available. Barges and tugs are also provided for loading some of the large liners. The Rio Grande company has a fuel oil contract with the Dollar line which operates a number of world liners. Fueling one of these liners is an interesting phase of terminal operation. The service barge is towed to the liner and the necessary connections quickly made. A barge containing 10,000 bbls. of fuel oil is unloaded in one hour. It requires three trips to fuel one of the large liners.

Connection to Refineries

The crude oil delivered to the terminal from the Elwood Field is transported in an 8-inch line to the Olympic and Rio Grande refineries. This line can also transport crude oil from the Signal Hill Field to the refineries. A 4-inch line connects the refineries to the terminal and there is also an auxiliary line between the terminal, the Olympic refinery and Signal Hill. A 7-mile line connects the Vinvale refinery with Santa Fe Springs. A line is also provided for the transportation of natural gasoline from Santa Fe Springs plants to the refinery The complete system of pipe lines connecting the company's crude oil production, refineries and terminal totals 65 miles.

Figure 3—Remote control rack located on wharves of terminal.

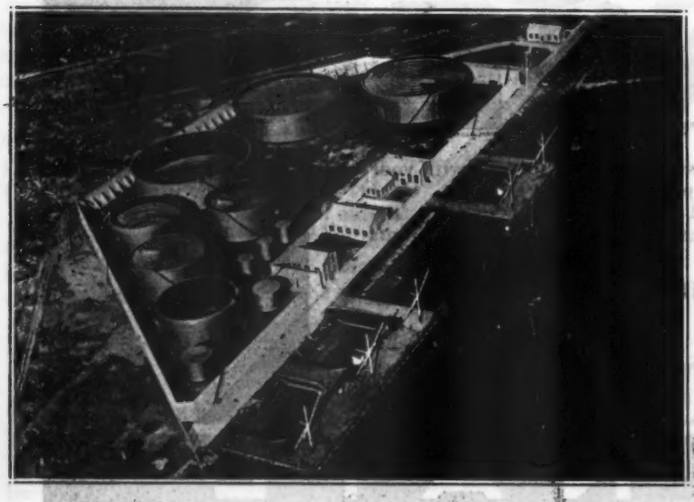
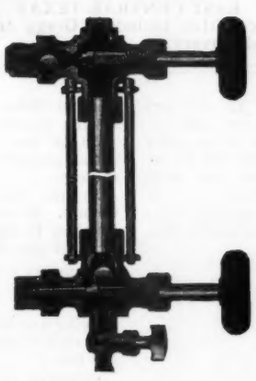


Figure 1—Airplane view of Long Beach terminal of the Rio Grande Oil Co.

Figure 2—Crude oil marine loading line at Elwood Field.

The LEADERSHIP of PENBERTHY PRODUCTS



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CHAIRMAN WILBUR OPPOSES TARIFF; TO PRESS COMPACT ON GOVERNORS

WASHINGTON, D. C., Jan. 6.—Secretary of the Interior Wilbur, who is also chairman of the Federal Oil Conservation Board, opposes a tariff on oil.

"The chief result," he said, "would be that the big companies, which now have many wells shut in and not in operation, would open them up, adding to the production. Overproduction is the basic ill of the industry. Besides this, our imports of petroleum are negligible, forming only about 10 per cent of the production. Our exports account for 15 per cent of the total production.

"In the future the country with the oil will dominate civilization. In it will be centered the wealth. America must conserve her supply. If we waste our oil reserves now, we will pay foreign countries through the nose for every barrel we import later. If I were the landlord of this country, I would see that we used as much imported oil as possible, and let the other fellow waste his reserves."

Unitization of oil fields, if adopted several years ago, he said, would have solved many of the problems of the industry.

Referring to the coming meeting of the governors of oil-producing states at Washington, January 15, he called attention to the action of the "same governors" at the Colorado Springs oil conference called by President Hoover in June, 1929, rejecting his proposal for an interstate between compact on conservation.

"The governors will be reminded of that when they assemble," Mr. Wilbur said.

Uniformity of conservation laws, stability of them, strict enforcement and flexibility of administration to meet changing needs, is the most feasible means of accomplishing an effective conservation policy, he said.

"It is necessary that the gas within the oil pools be saved. Without it, much oil will escape back into the sands and cannot be recovered. With wise use of the gas supply below ground practically all of the oil can be drawn out. This is the core of the unit plan of operation.

OIL MAN'S CALENDAR

JANUARY

3-10—New York, National Automobile Show.

7-8—Spokane, Wash., Washington Natural Resources Association.

8—New York, meeting, board of directors, American Petroleum Institute, A.P.I. headquarters.

12-18—St. Louis, Mo., American Road Builders Show.

14-15—Minneapolis, Minn., Minnesoto division, Northwest Petroleum Association, Radisson Hotel.

19-23—Detroit, Mich., annual meeting, Society of Automotive Engineers, Book-Cadillac Hotel.

21-22—Milwaukee, Wis., Wisconsin Petroleum Association, Pfister Hotel.

23-24—Oklahoma City, Okla., Oklahoma Petroleum Marketers Association, Huckins Hotel.

24-31—Chicago, National Automobile Show.

27-28—Aberdeen, S. D., South Dakota Independent Oil Men's Association, Alonzo Ward Hotel.

29-30—Grand Forks, N. Dak., North Dakota division, Northwest Petroleum Association, Dacotah Hotel.

FEBRUARY

3-4—Des Moines, Iowa, tenth annual convention, Iowa Petroleum Association, Fort Des Moines Hotel.

16-21 — San Francisco, Calif., National Western Metal Congress and Exposition.

24-26 — Columbus, Ohio, Ohio Petroleum Marketers Association, Neil House.

MARCH

11-13—Detroit, Mich., Michigan Oil Men's Association, Statler Hotel.

16-22—Los Angeles, Calif., second annual Exposition, Oil Equipment and Engineering Exposition.

19-20-21 — San Antonio, Tex., American Association of Petroleum Geologists, Gunter Hotel.

30-3—Indianapolis, Ind., Eighty-first meeting, American Chemical Society.

APRIL

13-18—Philadelphia, Pa., eighth annual convention and exposition, American Oil Burner Association, Ben Franklin Hotel.

15-16—A.P.I. Division of Refining, Statler Hotel, St. Louis, Mo.

MAY

4-9 — Charlotte, N. C., Good Roads Convention.

Memphis, Tenn., Natural Gas Department, A.G.A.

13-14—A.P.I. Division of Marketing, Mayo Hotel, Tulsa.

JUNE

3-4—A.P.I. Division of Production, Baker Hotel, Dallas, Tex.

Late Fields

SOUTHWEST TEXAS

FORT WORTH, Tex., Jan. 6.—Evans and Gant's No. 1 Love Ranch, in the J. Martinez Survey No. 1,594, Kerr County, has been corrected from total depth of 3,376 to 3,391 feet by steel line measurement. It was plugged back 3 feet to shut off water and swabbed down to 500 feet from bottom, then filled up 2,300 feet in five hours. It has made 280 bbls. of oil to date.

GULF COAST

HOUSTON, Tex., Jan. 6.—The producing area of the south side of Orchard, Fort Bend County, received another 500-foot extension Tuesday with the completion of Gulf Production Co.'s No. 27 Monroe, J. Frazier Survey, flowing 700 bbls. daily on a quarter-inch choke, pressure 360 pounds from sand at a total depth of 3,537 feet. Vacuum Oil Co. added a good well at Lockport, Calcasieu Parish, in its No. 30 Miller flowing 900 bbls., 8 per cent wash water, daily from sand at 4,380 feet.

OKLAHOMA

Magnolia Petroleum Co.'s No. 2 Wollesen, NE cor. SE NE Section 21-21-2w, extended production in the Perry district of Noble County, was opened January 4, and flowed 1,260 bbls. against a back pressure of 550 pounds. The next day's production was 503 bbls. against a back pressure of 750 pounds. The well is producing from the Misener sand at a total depth of 5,222 feet. It is believed the well will be completed at the present depth and will probably produce around 800 bbls. a day.

The first dry hole in the Wewoka townsite field was found when Ligon & Todd and others' No. 1 Wilson, NW cor. NE Section 30-8-8, found water at 4,120 feet. The water rose 1,200 feet in the hole. The Wilcox sand was found at 4,123-24 feet, where the water increased.

Potentials have been taken on approximately 160 wells in the Oklahoma City Field and new gauges show little difference in the potentials from the old time proration plan used prior to the adoption of the percentage proration plan. The sand wells show much more stability than the lime producers which show a marked decline in the lime producing district of the field. The potential gauges under the new proration plan are four hours each.

Scott & Co.'s No. 1 Ashby, NE cor. NW Section 14-11-3w, was bailed in Sunday but failed to make a steadily flowing well when completed and no oil went into the lease tanks. The well was cleaned out for 15 minutes. The next day the well made 400 bbls. in two and one-half hours. It is located in an area where other completed wells had an initial production of about the same amount.

The production from the Oklahoma City Field for the last seven days ending January 6, was as follows:

Date—	Bbls.	Wells prod.	Wells comp.
December 31	137,371	59	680
January 1	67,891	65	680
January 2	54,987	39	680
January 3	77,871	43	681
January 4	117,737	73	682
January 5	80,917	73	682
January 6	113,043	84	684

Production in Oklahoma City Field was extended one location east and north by the Empire Oil & Refining Co.'s No. 2 Gustin, which made 2,066 bbls. in eight hours and 7,000,000 feet of gas a day. The oil was found in the Wilcox sand at 6,472-6,512 feet.

R. A. McArthur and others' No. 1 Orman, SW cor. NW NW, Section 2-11-3w, was bailed in and was estimated to be 50,000 bbls. of oil and 50,000,000 feet of gas a day. No gauge was available.

Carter Oil Co.'s No. 1 Miller, SW cor. NE SW, Section 11-11-8, a wildcat in the Cromwell area, Okfuskee County, swabbed 53 bbls. of oil and 20 bbls. of water in 48 hours and will be put to pumping.

KANSAS

Skelly Oil Co.'s No. 1 Miles, NE cor., Section 30-27-10w, Kingman County wildcat, landed the 8-inch casing at 3,385 feet. The well was swabbed and made 145 bbls. in 8 hours. The oil tested 36 degrees gravity. The total depth of the test is 3,393 feet in Kansas City lime and it will probably be drilled deeper.

Skelly Oil Co.'s No. 1 Cone, in Section 31-22-3w, Harvey County, in the Burton district, has the top of the chat at 3,220 feet, and is underreaming the casing preparatory to drilling deeper into the chat.

In the Canton district, McPherson County, Helmerick & Payne's No. 1 Boesker, in Section 18-20-1w, was drilling near the chat at 2,850 feet.

Stanolind Oil & Gas Co.'s No. 1 Heibert, in Section 5-22-3w, Harvey County, south of the Voshell Pool, was underreaming the 8-inch casing at 2,880 feet. The chat is expected to be found at 3,170 feet.

Syndicate Oil & Gas Co.'s No. 1 Tammen, C SW, Section 11-18-16w, Rush County wildcat, found 15,000,000 feet of gas a day at 3,497-3,500 feet, and may be completed at that depth.

Northwest of Augusta, in Butler County, Wolf Creek Oil Co. and others' No. 2 Anderson, NW cor. SW NE, Section 6-27-4, was drilling in Simpson dolomite at 2,921 feet, with an estimated showing of 200 bbls. a day of oil. The well compares favorably with the offset wells which are yielding a low gravity oil.

Lario Oil & Gas Co.'s No. 1 A. Ritz, NE cor. SW, Section 1-20-2w, on the Shell Petroleum Corp.'s acreage, established a potential of 4,376 bbls. a day from the chat at a total depth of 2,978 feet. It has been shut in under the proration agreement.

High Spots in Field News

NORTH LOUISIANA-ARKANSAS

Extension wells in Zwolle show oil.

SOUTHWEST TEXAS

New pool indicated by well on Goliad-De Witt County line.

ROCKY MOUNTAIN AREA

Core drill test uncovers sand in Converse County, Wyoming.

CALIFORNIA

Situation at Playa del Rey not so satisfactory. Curtailment cuts production.

WEST TEXAS

New deep well at Big Lake increases output daily. Penn Pool extended to south.

KANSAS

Kingman County wildcat flows 150 bbls. first hour. Ritz Pool has 4,000-bbl. well.

NORTH TEXAS AND PANHANDLE

New potential test ordered in Panhandle. Sullivan area, Gray County, not dangerous.

OKLAHOMA

Production extended in the Perry area, Noble County, by well which starts off at 2,740 bbls.

EAST CENTRAL TEXAS

East Central Texas counties, including Gregg and Upshur, getting play following Rusk County discovery.

EXTEND NEW MEXICO PRORATION

SANTA FE, N. Mex., Jan. 5. — The proration agreement providing for a daily market outlet of 31,200 bbls. of New Mexico crude oil for a period of six months was renewed today at the request of 23 oil operators in the Hobbs area. It was signed by James F. Hinkle, state land commissioner.

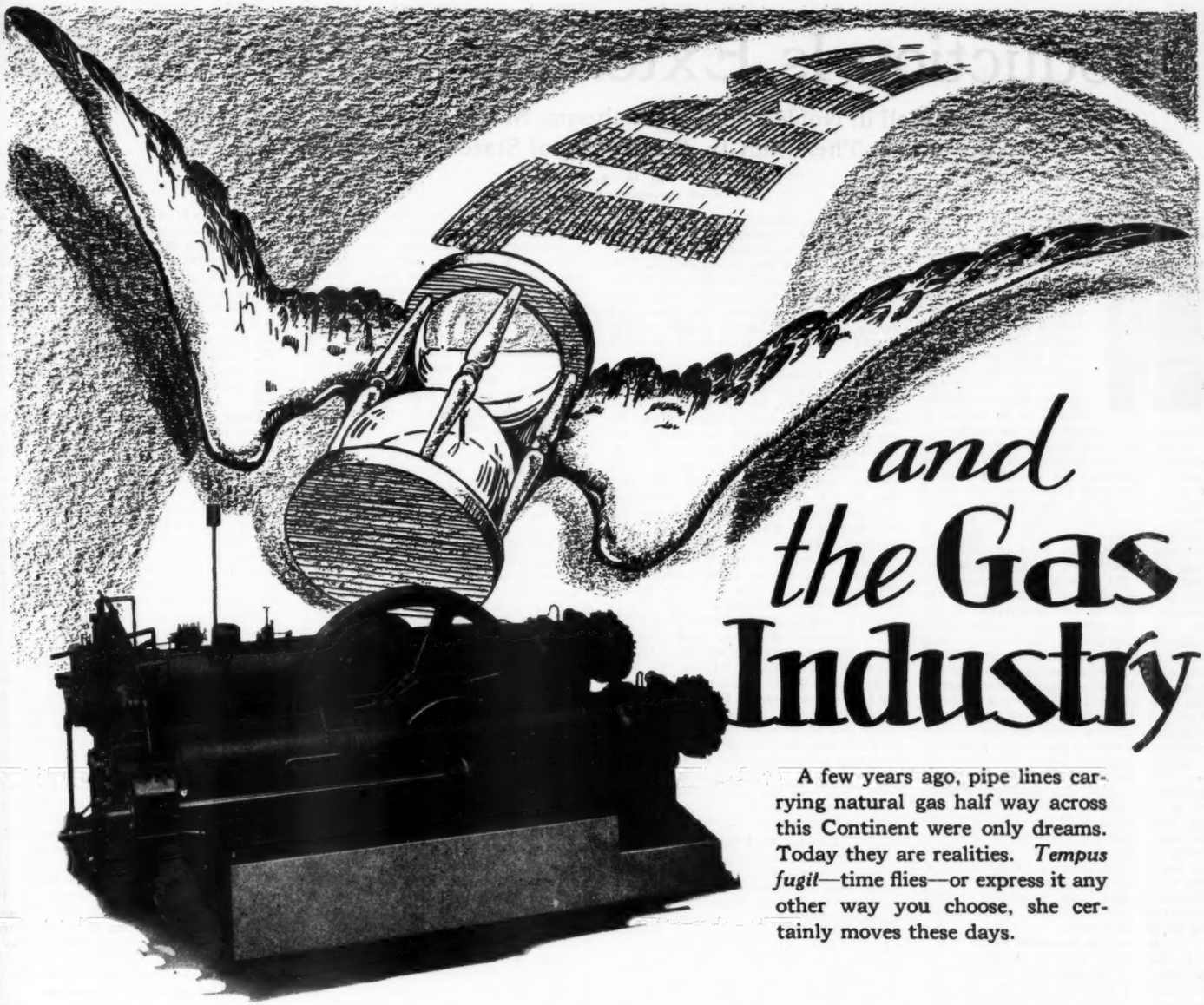
SCORE SHEET ON OIL PRODUCTION

Below is shown allotted average daily production in the United States from October 1, 1930, to April 1, 1931, suggested by the American Petroleum Institute's special committee on the economic situation, and the actual daily average production during the week ending December 27:

	Allotted (bbls.)	Actual (bbls.)	Over (bbls.)	Under (bbls.)
Okla., Kans., S. W. Tex., N. Tex.*	953,700	829,568	.....	124,132
W. Tex. and S. W. New Mexico ..	316,300	280,326	.....	35,974
North Louisiana-Arkansas	86,400	91,520	5,120	.....
Gulf Coast	177,800	178,575	775	.....
Rocky Mountain	58,600	61,948	3,348	.....
California	530,100	538,500	8,400	.....
Other fields	110,600	109,000	.....	1,600
Total	2,233,500	2,089,437	17,643	161,706

Net average daily underproduction 144,063 bbls.

*North Texas includes North, Central and East Central Texas and Texas Panhandle.



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Production Is Extended in Perry Area

New Well in Noble County, Oklahoma, Starts Off at 2,740 Bbls. per Day and Is Then Shut In. Production of State Down to 448,765 Bbls.

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Production in Oklahoma continues to decline due to the co-operation of producers in prorating all producing wells. The decline in the daily average production was approximately 9,000 bbls. a day for the week ending January 3. The total daily average was approximately 448,765 bbls. a day. Production in the State is now believed to be below the estimated requirements of the market.

Production was extended in the Perry district in Noble County, giving the area added importance as an oil producing district. Magnolia Petroleum Co.'s No. 2 Woollesen, NE cor. SE NE Section 21-21-2w, flowed 2,740 bbls. the first 24 hours and was then shut in. The well extends the Misener sand production a half mile southwest. It started flowing and made 274 bbls. the first hour from the Misener sand at 5,212-22 feet. The gravity of the oil was 46 degrees, corrected. The gas volume was estimated at 6,000,000 feet a day. The first gas was found in an upper formation at 5,200-10 feet and was estimated at 3,000,000 feet a day. The well is located southwest of the same company's discovery well, No. 2 Young, a Misener sand well, which was completed over a year ago and is now making 500 bbls. a day under proration.

Same company's No. 2 Summers, SE cor. NW Section 4-20-1w, in the Walltermire gas area, is a location. Empire Oil & Refining Co.'s No. 1 Freyler, SW cor. NE Section 4-20-1w, cored at 3,423-33 feet, where a showing of gas was found and the 8-inch casing was cemented on top of the showing. Prairie Oil & Gas Co.'s No. 1 Uppleman, SW cor. NW Section 22-22-1, was preparing to drill cement plugs at 3,287 feet, after cementing the 8-inch casing.

Activity in Southern Fields

In the Duncan area of Stephens County three new locations were staked during the week and several of the other operations were shut down. The new operations were the Junior Oil Co.'s No. 1 Thompson, SE cor. Section 1-1-7w, a wildcat, with the rig completed. A. L. Andree and others' No. 1 Patrick, CNL SE SE Section 3-3s-8w, is a wildcat location several miles west of the Comanche area. W. O. Smythe and others' No. 2 House, NW cor. Section 29-2-8w, was a new operation spudding.

Empire Oil & Refining Co.'s No. 2 Miller, SE cor. NE NE NE Section 5-2s-8w, an old producer being deepened, was drilling the cement plug at 2,240 feet, to test the sand. Stanolind Oil & Gas Co.'s No. 3 Pitts, SW cor. NE NW Section 3-2s-8w, a wildcat southeast of the Empire Field, was drilling at 2,660 feet. L. Sikes and others' No. 1 Kirk, NW cor. SE Section 16-1s-8w, was drilling at 3,300 feet. G. Pace and others' No. 7 Watkins, SE cor. Section 21-2s-7w, expected to be completed in a few days, had reached a total depth of 1,405 feet. In the extension area near Commanche, G. Pace's No. 4 Dilley, NW cor. NE NW SW Section 27-2s-7w, was shut down with the casing cemented on top of an oil showing at 1,498-1,503 feet. Crane and Rankin's No. 1 Adkins, NE cor. SE Section 14-1-9w, a wildcat, was drilling deeper at 2,450 feet.

Wewoka Activities

Some attempt has been made to curtail drilling developments in the Wewoka townsite pool, but owing to the number of small tracts similar to the Oklahoma City Field, townlot play is in progress and with the influx of independent operators, the announcement of new locations continues.

The Deep Rock Oil & Refining Co.'s No. 2 Smith (20A), SW cor. NW NE, Section 30-8-8, flowed 1,097 bbls. in 24 hours from a total depth of 3,940 feet. Same company's No. 1 Whitworth, NW cor. SW NE, Section 30-8-8, one of the older producing wells in the field, when drilled deeper increased its flow and made 2,537 bbls. when completed the second time from a total depth of 3,956 feet.

Ramsey Petroleum Corp. has purchased from Davis & Patterson a 60-acre lease in Section 19-8-8, in the Wewoka townsite pool in Seminole County, offsetting the Davis lease which has yielded the largest well ever found in the Seminole area. The location of the acreage is in the SW SW and N half NW SW, Section 19-8-8, for the reported consideration of $25,000. Several months ago the Mid-Kansas Oil & Gas Co. secured a half interest in the Davis lease in Section 30-8-8, in the heart of the Wewoka townsite pool, for drilling three wells to the Wilcox sand. The No. 2 Davis, has a daily potential of 16,426 bbls. and No. 3 Davis is making around 700 bbls. an hour.

The discovery of a stray sand extended production in the Konawa Pool. Gypsy Oil Co.'s No. 1 Charty, NE cor. SE SW, Section 29-6-6, the most southern drilling test in the Konawa Pool, in southern Seminole County, flowed 341 bbls. in 4 hours and 40 minutes from a stray sand at 2,609 feet. Indications are the production may spread into the next township southwest with a possible play in Sections 1-5-5 and 6-5-6, Seminole County. The well was estimated to be making 125 bbls. an hour in the last report.

Tatums Pool Extended

The Tatums Pool in Carter County was extended more than a mile, these extensions being an almost weekly occurrence in the area. Other tests were finding showings of oil in the old producing area. Frank Gouin and others' No. 1 Burton, SE cor. SW NE, Section 31-1s-2w, is estimated at 100 bbls. a day extending the producing area approximately 1½ miles southeast. The oil was found in a series of sands at 1,822-1,970 feet. The test was being cleaned out and no accurate gauge can be made until the well is completed. Indications are it may prove up a strip of territory about 2 miles long in the Tatums Pool. The oil tests about 28.5° gravity, corrected, which is a little higher gravity than other oil found in the southeast extension area.

A new location was staked about a quarter of a mile southeast of the new well for L. Woodruff and others' No. 1 Brady, NW cor. SW SW, Section 32-1s-2w. The Texas Company's No. 5 Eaves, NW cor. SE SW, Section 24-1s-3w, in the south end of the field, was being completed and was estimated at 100 bbls. a day. The oil was found in sand at 2,393-2,417 feet. The Carter Oil Co.'s No. 1 Grooms, SE cor. NE NE, Section 24-1s-3w, on the east side of the producing area, was drilling in an oil sand at 1,920-46 feet. Magnolia Petroleum Co. has two tests with the casing cemented on top of the sand. No. 1 McCrory, SE cor., Section 10-1s-3w, three-quarters of a mile northwest of production in the area has casing cemented at 2,353 feet, with the test showing oil at a total depth of 2,363 feet. Same operator's No. 3 Dickerson, NW cor. NE SE, Section 24-1-3w, on the east side of the field, has casing cemented at 2,020 feet, with the total depth of the test 2,030 feet, showing oil. Same operator's No. 3 Carter, NW cor. SE SW, Section 14-1s-3w, a diagonal offset to the Lesh-McCall well which extended production a quarter mile to the north was preparing to spud.

Southeastern Fields

The southeastern counties in the State where the drilling is shallow is becoming active. New wildcat locations are being staked almost each week and the gas areas are being developed where an outlet is available.

Latimer County is being tested and Limestone Oil & Gas Co.'s No. 2 McMurray, NE cor. SW SW, Section 15-5-18, found 1,000,000 feet of gas at 2,519-55 feet and was drilling deeper at 2,560 feet. Midwestern Oil & Gas Co.'s No. 1 Norris, C NW SE, Section 12-6-21, was abandoned at a total depth of 2,400 feet. The test had 250,000 feet of gas a day at 1,823-2,075 feet and after a shot failed to increase the gas showing it was abandoned. Same company's No. 1 Bullock, C N half SW, Section 3-6-19, was drilling at 2,300 feet with nothing showing. English and others' No. 1 Weaver, C NW SE, Section 16-6-19, was spudding. Choctaw Gas Co.'s No. 1 Paunooci, SE cor. NE, Section 3-6-22, was drilling at 600 feet.

Three new locations were announced during the week in the area southwest of the Quinton gas field in Pittsburg County. Choctaw Gas Co.'s No. 1, in the NE cor. NW NE, Section 16-7-18, and the same company's No. 1 in the SW cor. NE SE, Section 8-7-18, and Rogers and others' No. 1 Henderson, in Section 8-7-18, were locations. J. Morrison and others' No. 1, in the NE cor. SE, Section 13-7-17, is preparing to spud. M. J. Sullivan's No. 2 Koehler, NW cor. NE NE, Section 15-7-18, was completed for 12,500,000 feet of gas from sand at 1,862-1,930 feet.

Work in Kay County

Kay County is being developed with new activity in scattered parts of the county. Northeast of production in the old Mervine Pool, Summit Drilling Co.'s No. 1 Hayes, NW cor. NE NW, Section 24-28-3, was being drilled at 1,800 feet. Wilright Gas Co. and others' No. 1 Wildgrube, NE cor. SW, Section 14-27-1, was spudding. Blackwell Petroleum Co.'s No. 1 Harshman, SE cor., Section 2-26-1w, is a location. Boucher Oil & Gas Co.'s No. 1 Jefferson, NE cor. SW, Section 32-26-1w, is spudding on the second hole after losing the first at a total depth of 1,175 feet. The location is a half mile north of the Tonkawa townsite. J. S. Pine's No. 2 Ogg, NW cor. SE, Section 35-25-1w, is a rig moving in, in the Three sands area. Blankenship Petroleum Corp.'s No. 1 Hollenbeck, SW cor. NE SE, Section 18-27-2, was spudded and shut down.

Oklahoma City Completions

The completions in the Oklahoma City Field during the week ending January 2 were as follows: Phillips Petroleum Co.'s No. 1 Clayton, NE cor. NW, Section 10-11-3w, made 5,868 bbls. of oil in four hours and 25,000,000 feet of gas a day. The oil was found in the Wilcox sand at 6,303-6,565 feet. Wirt Franklin Petroleum Corp.'s No. 5 Thiemer, SW cor. SE, Section 2-11-3w, was completed for an estimated 200 bbls. an hour. The gas volume was estimated at 2,000,000 feet a day. The total depth of the test is 6,519 feet. Blackwell Oil & Gas Co.'s No. 1 Community, SE cor. NW NE, Section 10-11-3w, made 531 bbls. of oil in 15 minutes from the Wilcox sand at 6,280-6,495 feet. Gant & Garvin's (now Sunray Oil Co.'s) No. 1 Dunavan, SW cor. SE, Section 34-12-3w, flowed 8,595 bbls. in three and one-half hours from the Wilcox sand at 6,328-6,486 feet. Same operators' No. 1 Mead, SE cor., Section 34-12-3w, made 8,953 bbls. of oil in 3 hours and 25 minutes from the Wilcox sand at 6,245-6,416 feet.

Operators are expecting to have a busy week with more than a dozen tests ready to connect up for completion and several others waiting for cement to set on the last string of casing with only a few more feet to drill after drilling the cement plugs.

Pipe line companies are attempting to take care of the underproduced wells which, according to the report of Otto Bradford, field umpire, represent a total of 506,114 bbls. that was still being held back. About 60,000 bbls. of the underproduced oil was handled by the

(Continued on Page 97)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Drlg. 4,835 ft.

ATOKA COUNTY

Edgerton-Edwards' No. 1 Roland, C NW Sec. 9-1-15	Drlg. 600 ft.

BECKHAM COUNTY

Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w	Shut down 765 ft.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cement to set 480 ft.
Mid-Texas Co.'s No. 1 Sidell, SE cor. SW SW Sec. 17-2-22w	Shut down 2,510 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w	Fishing 2,570 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	Drlg. 4,605 ft.

CADDO COUNTY

Magnolia's No. 1 White, SW SE Sec. 25-6-10w	T. D. 5,012 ft.; plugged back to 3,065-3,106 ft.
Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w	Drlg. 1,105 ft.

CLEVELAND COUNTY

Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1	Shut down 6,518 ft.

COAL COUNTY

Whitney et al's No. 1 Miller, SE NE Sec. 10-3-9	Drlg. 710 ft.
Mid-Western Oil Co.'s No. 1 Gum Bros., C SW NW Sec. 30-3-10	Shut down 3,326 ft.; plugged back to 1,516 ft.; hole full water; abandoned.

COMANCHE COUNTY

Croy & Young's No. 1 Cline, NW NE NE Sec. 8-3-10w	Shut down 2,221 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	Shut down 1,450 ft.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	Shut down 5,825 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w	Shut down 100 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e	Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW Sec. 10-9-18e	Shut down 2,387 ft.

GREER COUNTY

French's No. 1 Murphy, SW NW Sec. 23-7-21w	Shut down 780 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w	Shut down 2,593 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w	Shut down 625 ft.

(Continued on Page 128)

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Ritz Pool Presents 4,000-Barrel Well

Test in Kingman County, Kansas, Makes Good Initial Flow From Lime Pay. Production Continues Above Refinery Demand

By W. A. Spinney
Staff Correspondent, Kansas Fields

Kansas production was being held at steady levels and the first week in the new year shows little change from the previous week's report. The State's average daily production was approximately 108,000 bbls. a day for the week ending January 3. An important wildcat test found oil in Kingman County and a new gusher well was completed in the Ritz Pool, in McPherson County.

Skelly Oil Co.'s No. 1 Miles, NE cor., Section 30-27-10w, a wildcat in Kingman County, found oil in the Lansing lime and started flowing 150 bbls. the first hour, and later making 50 bbls. in 30 minutes. When the well blew in the sudden increase in gas blew the tools up the hole causing a fishing job, and bridging the hole. Kingman County first became an oil producing county in 1926 and then ceased in 1927 when the only producer in the county was abandoned. The Skelly Oil Co.'s test is on a core drilled block of 10,000 acres in the northwestern part of the county. Kingman County's first oil well completed in 1926 was Port Fleeger and others' No. 1 Richardson, NE cor. SE, Section 17-27-7w, which found oil in chat at 3,853 feet. The well made an initial production of 120 bbls. of 28 gravity oil. It was drilled deeper and increased its flow to 804 bbls. in 24 hours from pay at 3,876-94 feet. The property was purchased by the Carter Oil Co. The well soon settled down to 135 bbls. a day, making considerable water, and it was abandoned in September, 1927. As the result of finding oil in the first wildcat in Kingman County oil operators began leasing in western Kansas and some of the tests now drilling resulted from the taking of such leases.

Big Gas in Decker District

The Decker district in McPherson County is becoming an important gas producing area, and it continues to expand. It now covers an area approximately 2½ miles east and west, and 2 miles north and south. A total of 16 producing gas wells have been completed with an estimated potential of 250,000,000 feet of gas a day. The largest producer is the McPherson Oil & Gas Co. which owns all the gas rights on the Shell Petroleum Corp.'s acreage and is estimated to control approximately 160,000,000 feet per day of known gas production. The remainder of the gas leases are distributed among the Derby Oil Co., W. C. McBride, Inc., Graham-Rush Oil Co. and Broswood Oil & Gas Co. The gas is being marketed through the Kansas Pipe Line Co.

McPherson County continues to be the most active area in the State. Seven new operations were announced during the past few days in the county. Six were locations and one is an old well to be drilled deeper. New locations were for Rush Drilling Co.'s No. 1 Johnson, C SE NW, Section 14-19-2w; Broswood Oil & Gas Co.'s No. 2 Griffin, C SW SW, Section 14-19-2w; McPherson Oil & Gas Co.'s No. 1 Meyers, C SE, Section 14-19-2w; same company's No. 1 Salthouse, C SE, Section 15-19-2w, and No. 1 Finkle, C NE NW, Section 23-19-2w, and W. C. McBride, Inc.'s No. 2 Griffin, C SE SW, Section 14-19-2w. Helmerich & Payne will drill an old well deeper located in C SE, Section 12-20-2w. The test was drilled to the chat at 2,832-74 feet by the Shell Petroleum Corp. and completed about six months ago.

4,000-Bbl. Well in Ritz

Another gusher was completed in the Ritz Pool in McPherson County, estimated at 4,000 bbls. a day, believed to be the second largest well completed in the area. Lario Oil & Gas Co.'s No. 1 A. Ritz, NE cor. SW Section 1-20-2w, flowed an average of 180 bbls. the first four hours. Due to the unexpectedly heavy flow of oil the stock tanks were unable to handle all the production and part of the oil was allowed to flow into earthen pits. The well is located on O. A. Ritz land, on which the discovery well in the area was drilled about a year and a half ago. It is the fifth test completed on the land. Three of the other four were meduim sized wells and the other was a dry hole. The acreage was originally owned by the Shell Petroleum Corp. and farmed out to the Lario Oil & Gas Co. The oil was found in the chat at 2,935 feet and the big pay at 2,975-77 feet.

In an attempt to extend production in the Canton area, C. B. Davis and others' No. 1 Ritz, SE cor. SW Section 19-19-1w, was spudding. The location is a half mile north of the production in the Canton area.

A new location was announced and the rig was moving in for a test a half mile from production in the Ritz Pool. Syndicate Oil & Gas Co.'s No. 1 Becker, SE cor. Section 36-19-2w, is located on Shell Petroleum Corp. acreage.

Two new gas wells were completed in the Decker gas pool in McPherson County during the week. McPherson Oil & Gas Co.'s No. 1 Griffin, in Section 14-19-2w, is good for 14,500,000 feet of gas from the chat at 2,922 feet. W. C. McBride, Inc.'s No. 1 Griffin, in Section 14-19-2w, was making 3,500,000 feet of gas from the chat at 2,921 feet.

In the Eastborough Pool

Another producer was completed in the Eastborough Pool in Sedgwick County during the week by the Magnolia Petroleum Co., the thirty-fourth well in the area. It was No. 1 Vickers, SW cor. Section 17-27-2, at the northeast edge of the producing area, on part of the acreage purchased from Mrs. Vickers, of Vickers Petroleum Corp. The chat was found at 2,932 feet with a showing of oil and the casing was cemented at 2,936 feet. The chat formation was found to be regular and a good-sized well is expected when completed. It was making 10 bbls. an hour and is the highest well on structure in the pool.

In northeastern Marion County another test was completed in the Lost Springs Pool offering an important addition to the district. R. E. Youker and Phillips Petroleum Co.'s No. 3 Riffel, SE cor. Section 10-17-4, is estimated to be a 250-bbl. well. The chat horizon carrying the oil was found from 2,336-70 feet. During the last half of the year the Lost Springs Pool has had several tests make wells extending production to the northeast of the townsite.

A disappointment to the owners was a dry hole offsetting the recent discovery of the Prairie Oil & Gas Co. in northeastern Barton County. The Twin State Oil Co. and Syndicate Oil & Gas Co.'s No. 1 Perino, in Section 4-16-11w, Barton County, has been abandoned at a total depth of 3,341 feet. It is the first test drilled since the discovery well was completed last summer for 200 bbls. a day from the Silicious lime by the Prairie.

Near Dodge City in Ford County, in the southwestern part of the State, Swaim Oil Co.'s No. 1 Taylor, C NW Section 21-25-24w, has cemented 6-inch casing at 4,305 feet. The owners expect to reach the Simpson sand at 5,250-5,300 feet, and if commercial is not found the test may be drilled to the Silicious lime which is expected at 6,000 feet.

National Refining Co. and others' No. 1 Gsell, SE cor. SW, Section 1-27-1, almost 2 miles east of the Eastborough Pool, in Sedgwick County, found water in the Simpson sand and was being abandoned. The water sand was found from 3,358-72 feet.

The Schurr Pool in Rice County is again without an outlet for its oil production. The Prairie Oil & Gas Co. started buying the oil December 1, and was handling 50 bbls. a day per well, but stopped running oil on January 1, in all areas in the State. The Vickers Petroleum Co. and others recently completed Nos. 2 and 3 Binger, in Section 21-20-10w, giving the pool 11 producers with an estimated daily potential of 15,000 bbls. a day. The pool was discovered in the spring of the year and the Independent Oil & Gas Co. handled the oil at the rate of 50 bbls. per well through a loading rack until July when it quit, leaving the pool without any pipe line until December.

Ellsworth County

Hershey and others' No. 1 Schaltz, C NE, Section 9-14-8w, is a rig.

Greenwood County

Simmons and others made location for No. 2 Inthurm, SW cor. SE SE, Section 19-22-12. Ritchey Drilling Co.'s No. 1 Dunlap, SE cor. SW NE, Section 9-25-9, has been completed for 25 bbls. in sand 2,137-74 feet.

Marion County

Youker and others' No. 3 Riffel, SE cor., Section 10-17-4, has been completed for 125 bbls. in chat 2,333-98 feet.

Morris County

Loomis and others' No. 1 Jentis, CNL NE SE, Section 16-16-7, is drilling deeper at 2,250 feet.

McPherson County

Rush, Graham Brothers and Shell Petroleum Corp.'s No. 1 Robinson, C SE SW, Section 10-19-2w, has been completed for 12,000,000 feet of gas after being deepened from 2,930 feet to 2,940 feet. Syndicate Oil & Gas Co. and Shell Petroleum Corp. made location for No. 1 Becker, SE cor., Section 36-19-2w. Lario Oil Co. and Shell Petroleum Corp. made location for No. 4 Miller, NW cor. SE, Section 1-20-2w.

Sedgwick County

Blankenship Petroleum Co.'s No. 2 Shaffer, SE cor. NE NW, Section 30-27-2, Eastborough Pool, has been deepened from 3,265 feet to 3,266 feet and increased production from 550 bbls. to 1,000 bbls.

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

BARBER COUNTY

Company, farm and location—	Remarks:
Allison & Fitzwilliams' No. 1 Kumberg, SE SW SE Sec. 2-30-12w	Drlg. 4,650 ft.

BARTON COUNTY

Skelton Oil Co.'s No. 1 Ott, C SE SE Sec. 16-19-14w	Shut down 820 ft.
McCool et al's No. 1 Tsern, NW SE NE Sec. 12-20-11w	Shut down 1,600 ft.

BUTLER COUNTY

Farrell et al's No. 1 Sutton, NW cor. Sec. 18-28-7	Shut down 1,875 ft.

CLARK COUNTY

Watchorn's No. 2 Morrison, NW NE Sec. 20-32-21w	T. D. 6,909 ft.; plugged back to 6,530 ft. to test show gas.

CLAY COUNTY

Crystal Oil et al's No. 1 Tivier, SW cor. Sec. 19-8-2	Shut down 2,390 ft.

COFFEY COUNTY

Heyburg's No. 1 Kroft, SE SW SE Sec. 30-22-14	Shut down 1,150 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15	Fishing 1,250 ft.

COWLEY COUNTY

Roth & Farout's No. 1 Reedy, SW NW NE Sec. 8-32-8	Shut down 1,040 ft.
Tom Fine's No. 1 Boyd, NW NE Sec. 23-32-4	Shut down 2,650 ft.

DICKINSON COUNTY

Severs et al's No. 1 Lavengood, NE SW Sec. 12-13-2	Fishing 3,178 ft.

ELK COUNTY

Aladdin's No. 1 Donnell, NE SE SW Sec. 26-29-10	Wilcox 2,386-2,411 ft.; show oil; hole full water; abandoned.

ELLSWORTH COUNTY

Alyward et al's No. 1 Stratman, SE NW SE Sec. 1-17-10w	Rig.
Aladdin Pet.'s No. 1 Stoddenberg, C SW Sec. 22-16-10w	Shut down 1,130 ft.
Milton et al's No. 1 Kester, SE NE Sec. 6-14-9w	Shut down 330 ft.
Aladdin and Carter Oil Co.'s No. 1 Barecky, C NW Sec. 3-16-10w	Shut down 2,718 ft.

FORD COUNTY

Swain et al's No. 1 Taylor, C NW Sec. 21-25-24w	Shut down 4,300 ft.

GOVE COUNTY

Johnson and Atlantic's No. 1 Wright, SE NE Sec. 11-12-27w	Drlg. 4,033 ft.
Valerius & Baucher Oil Co.'s No. 1 Todd, NW cor. Sec. 24-12-27w	Drlg. 4,666 ft.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Clark, SW NE NE Sec. 11-9-25w	Drlg. 3,790 ft.
Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w	Abandoned 4,370 ft.

HARPER COUNTY

Beeler et al's No. 1 Bear, C NE Sec. 21-36-6w	Shut down 1,830 ft.

KINGMAN COUNTY

Skelly Oil's No. 1 Miles, NE cor. Sec. 30-27-10w	1,635-40 ft. 2,000,000 ft. gas; at 2,005-20 ft., 6,000,000 ft. gas; at 2,133-42 ft., 3,000,000 ft. gas; drlg. 3,352 ft.

(Continued on Page 130)

KETTLEMAN CONFERENCE ENDS

LOS ANGELES, Calif., Jan. 5.—Kettleman Hills oil operators have terminated the series of conferences which have engaged their attention the last few weeks. Last week revisions were made by the committee in the plan for unit development of the area at the suggestion of Doctor Holland of the Interior Department's legal staff who is here to represent Dr. George Otis Smith, director of the United States Geological Survey. The amended plan is in the hands of the committee of attorneys for final drafting after which it will be forwarded to Dr. Ray Lyman Wilbur, Secretary of the Interior, for approval before being submitted to the various Kettleman Hills interests for their signatures.

OIL SHALE SURVEY

The statement has been made by Representative Cramton (Republican Michigan), in charge of the Interior Department appropriation bill, that at the present rate of surveying public lands it will take 250 more years to complete the work. To date 1,304,000,000 acres have been surveyed but 515,000,000 acres are unsurveyed. Mr. Cramton favors restricting oil shale land surveys on the ground that they are a waste of time because oil shale will not be of commercial value for many years to come.

This newest Goodyear Belt

keeps pumps and drills operating

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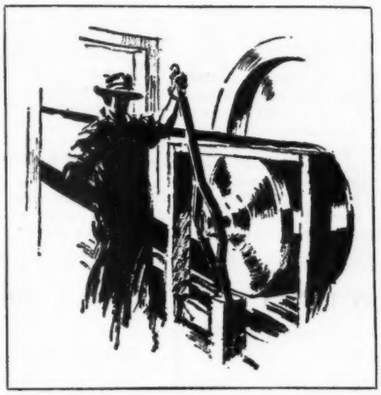

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See the G.T.M. for lower costs—just write to Goodyear, Akron, Ohio, or Los Angeles, California.

**Goodyear Thor Belting, seamless, is made in widths up to and including 16"—Thor quality of special construction is available for larger sizes*

THE GREATEST NAME IN RUBBER

GOODYEAR

BELTS • MOLDED GOODS • HOSE • PACKING

New Pool in Southwest Texas District

Well on Goliad-De Witt County Line Looks Like a Good One. Kerr County Wildcat Also Considered Promising

By B. D. Stevenson
Staff Correspondent Southwest Texas Fields

SAN ANTONIO, Tex., Jan. 5.—The tail end of 1930 and the opening hours of 1931 saw the birth of one new and important pool in Southwest Texas and just missed two or three others. T. B. Slick's No. 1 Poetter (carried in some reports as No. 1 Taylor) on the Goliad-DeWitt County line, about 6 miles east of Nordheim on the Southern Pacific Railroad, and 20 miles northeast of the Pettus Field which is nearest production, is a well and looks like a good one. The first 12 hours after coming in it flowed 273 bbls., which was up to Monday morning, December 29, the next 24 hours it flowed 491 bbls. on five-eighths-inch choke and the next 24 hours 227 bbls. on seven-sixteenths-inch choke and is now shut in waiting for pipe line connection as the 2,000-bbl. storage on the lease is full. The owners are at this time making arrangements for an outlet for the oil. Six miles of pipe line would reach the Southern Pacific Railroad at Nordheim to the west where a loading rack could be built. The Humble Pipe Line Co. has a line from the Pettus Field and it would take a 26-mile extension to connect with it.

The well makes considerable gas. The oil is 48 gravity. Total depth is 4,212 feet, casing is set at 4,194 feet and top of the Jackson, which is the marker in that region, is given as 3,080 feet and especially high. The company owns about 3,500 acres around the well. The geology was worked out originally by Ralph M. Sturms and the acreage blocked and turned to Slick. The fault line is mapped as extending generally northeast and southwest and extending down to the southwest a little north of the Pettus area. Raccoon Bend, 100 miles northeast, and Pettus Field, 20 miles southwest, are on a line with this Slick producer and all are located about the center of the Reynosa outcrop, more or less connecting the geology of all three producing spots.

Following the bringing in of the Pettus field operators went into this stretch of 125 miles of territory between the Raccoon Bend and Pettus Field and blocked leases wherever they could find a likely looking structure. A few tests have been drilled but there are many blocks yet that have not been touched.

Discovery of this new production in the Slick well is naturally going to bring attention back to that territory and will in the natural order of things bring about some drilling during the year 1931. It is new business for the new year.

Pettus area seems thus far to consist of relatively small producing spots and is slightly disappointing in that respect. Raccoon Bend on the other hand and at the other end of the area is a pool of big dimensions and thick formations and big production. These are factors that force themselves upon the attention of the industry. There is more than one producing sand in the Raccoon Bend Pool and more than one also in the Pettus area where production is had at around 2,900 feet, at around 3,900 feet and below 4,000 feet.

Kerr County Wildcat

Evans & Gant's No. 1 Love in southwestern Kerr County missed getting into the producing column as a completed well for 1930 but a few days more work will make it one of the first for 1931. The company has completed underreaming and lowering the casing and it has developed that the water was coming from the bottom of the hole which with steel line measurement is now given as 3,391 feet. The bottom has been plugged off with steel wool and 3-inch tubing is being run and if the well fails to flow it will be put on the pump. It seems practically certain that it is an oil well and will make at least a small pumper.

Importance of the well, however, is far in excess of its size as it is 100 miles from any production of consequence and is practically the first good looking proposition on the southeastern edge of the Edwards Plateau where there has been practically no exploration work done up to this time. During the past year Sterling brought in No. 1 Willie Werner in Kendall County some distance to the east, a small pumper at less than 1,000 feet total depth. This looks like a much bigger and better well and these two are the only producers in that region north of the Balcones Fault and are almost the only ones ever drilled there.

Southwest Texas Production

Average daily production for the week ending January 3:

Bexar	280
Branyon	20
Bruner	14,950
Buchanan	115
Chapman	5,150
Dale	280
Duval	180
Darst Creek	30,500
Kingsville	115
Larremore	15
Luling	9,320
Lytton Springs	729
Manford	210
McMullen	30
Medina County	20
Mirando	14,400
Normanna	25
Pettus	8,450
Saxet	25
Somerset	1,350
Yoast	250
Total Southwest Texas	86,415
Week ending December 27	92,165
Decrease	5,750

Other Near Producers

The other propositions that fell short of getting under the wire before the close of the old year were the Vacuum Oil Co.'s No. 1 Duval Land Co. in Survey 280 in northwestern Duval County. At 1,803-23 feet it had a good showing but the seat gave way when a drill stem test was attempted and it remains to be seen what the hole will do finally in the way of production.

This test is about 4 miles southwest of the S. R. C. Oil Co. and Vacuum Oil Co.'s No. 1 Duval Land Co. in Survey 293 which is a producer at around 1,717 feet. Vacuum has some 65,000 acres in the block with contract to drill three tests and a producer will perpetuate one-third of the entire block. The first test drilled was a producer and now the second test to be drilled has a showing of oil.

Another test put up quite a little showing for a time but later began to produce bad news in the form of water. Al Buchanan's No. 1 Wood-Welder, 15 miles east of the Vacuum well just mentioned and 5 miles from the north line of Duval County and about the center of the county east and west in Survey 215, at 1,523-26 feet had a sand that on drill stem test looked almost like a sure shot. Casing was set and the plugs drilled late last week and it produced so much water that it is a disappointment but not utterly hopeless yet for it also produced considerable oil.

This well is in a territory where a number of operators have fussed around the past few years and drilled holes that although not producers seemed to indicate there was something there and on the strength of this evidence the Buchanan well was drilled. However, the Buchanan test is down only 1,500 feet and there is plenty of ground under it that the drill has not gone into. Production was really expected somewhat deeper.

Prospect in Frio

In Frio County A. H. Wray's No. 1 Burns estate has gone into the Edwards lime and has a showing of oil. The showing is good enough to warrant setting casing which he has done at 3,600 feet with top of the Edwards at 3,662 feet and total depth 3,708 feet. This well topped the chalk at 3,290 feet and made a million or two feet of gas in Taylor marl at 2,368 feet. It is in the northeastern part of Frio County, 25 or 30 miles southwest of San Antonio and about 10 miles south of the west end of the Somerset Field which is producing from the Taylor marl at about 1,700 feet.

The thing about the Wray well that holds attention is that it is one of the best Edwards lime showings in the Balcones Fault zone west of San Antonio. The Edwards in the old Luling, the Joe Bruner and the Darst Creek Fields has been wonderfully productive. These fields are in the Balcones Fault zone east of San Antonio. Efforts to find production in the zone west of San Antonio have thus far been fruitless and any showing in the Edwards in this territory to the west causes oil men to sit up and take notice. Some think that the Ed-

(Continued on Page 96)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

BLANCO COUNTY

Company, farm and location—	Remarks:
H. L. Lewis' No. 1 Glasscock, moving in to drill on leases out of the Rodson block north of Blanco City	T. D. 500 ft.; drlg.
Hardy-Sitton's No. 1 McMillan	T. D. 700 ft.; shut down.
Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155	T. D. 600 ft.; standing.
McCleary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft. to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City	T. D. 550 ft.; shut down.
J. R. Meek's No. 1 Walker, 360 rds. from W line, 482 rds. from S line of 375-ac. tract in Sur. No. 32	T. D. 985 ft.; fishing.
G. Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,350 ft. to N line, Sur. No. 94	T. D. 492 ft.; drlg.

BASTROP COUNTY

Pacific Oil & Gas Co.'s No. 1 J. M. Litton, 150 ft. N and W lines of tract	T. D. 2,525 ft.; drlg. in Edwards.
Majestic Pet. Co.'s No. 1 J. M. Breeding, 160 ft. from N line, 1,020 ft. from W line of 200-ac. tract, 940 varas from W line, 1,225 varas from S line of M. Andrews Sur., 13 miles W from Smithville	T. D. 375 ft.; standing.
Humble Oil & Ref. Co.'s No. 1 Jones, 450 ft. from S line and 150 ft. from N line of farm, Jose A. Navarro Sur.	T. D. 1,493 ft.; dry and abnd.
R. S. Bolling's No. 1 McWilliams, 150 ft. from N line, 1,111 ft. from W line of Wm. McWilliams tract, Glasscock Sur.	T. D. 2,240 ft.; shut down.

BROOKS COUNTY

Ed East's No. 3 B. Garcia, 150 ft. from N and W lines of Blk. 5, Share A-1, Las Mastena y Gonzalene grant	T. D. 1,002 ft.; drlg.

BEE COUNTY

William F. Morgan and Independent Oil & Gas Co.'s No. 1 Quincy, C Blk. 9 of 11,000-ac. Quincy Subd. of Bee County	T. D. 6,028 ft.; abnd.
Hurlbut et al's No. 1 Mrs. D. Chestnut	T. D. 5,010 ft.; shut down.
E. S. Price's No. 1 Weiss, 200 ft. each way out of NW cor. of B.&B. Sur.	T. D. 4,423 ft.; preparing to swab.
E. S. Price's No. 2 Weiss, 900 ft. due SW of No. 1 Weiss, B.&B. Sur.	T. D. 4,462 ft.; circulating mud.
E. S. Price's No. 3 Weiss, 900 ft. due NE of No. 1 Weiss	Location.

(Continued on Page 76)

SOUTHWEST TEXAS PROVEN AREAS

DOBROWOLSKI POOL—BEXAR COUNTY

Company, farm and location—	Remarks:
Morgan Bros.' No. 3 Masterson, 300 ft. S of No. 2 Masterson, Miguel Gortaris Sur.	T. D. 550 ft.; set csg.
F. H. Eckert's No. 1 Dobrowolski, 400 ft. from W line, 150 ft. from S line of lease, Sur. No. 52	Location.
W. R. Swearingen's No. 2 Halberdier, 300 ft. SE of No. 1, J. Perege Sur.	T. D. 460 ft.; standing.
A. J. Swearingen's No. 6 Sandemer, 600 ft. S of No. 1, M. Manchaca Sur.	Location.
A. J. Swearingen's No. 7 Sandemer, 300 ft. S of No. 6, M. Manchaca Sur.	Location.

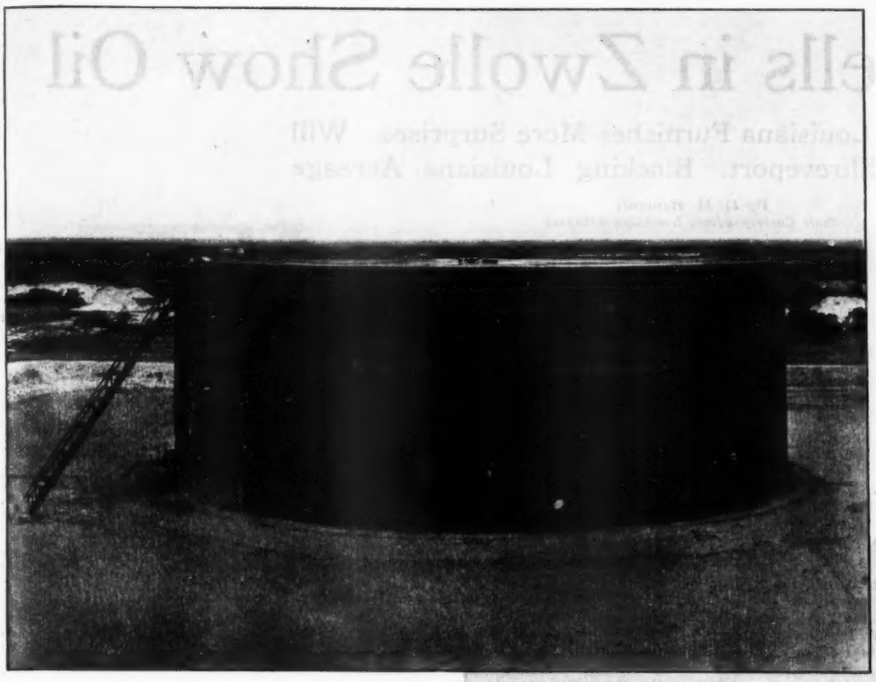
DARST CREEK FIELD—GUADALUPE COUNTY

Gulf Production Co.'s No. 6 Tadlock, 150 ft. N line of lease, 300 ft. E of No. 4	T. D. 2,619 ft.; comp. for 480 bbls. pumping.
Gulf Prod. Co.'s No. 14 Dix-McKean, 300 ft. from No. 5, 150 ft. from E line	T. D. 2,592 ft.; comp. for 818 bbls. pumping.
Gulf Prod. Co.'s No. 15 Dix-McKean, J. R. Robinson Sur.	T. D. 2,502 ft.; drlg.
Gulf Prod. Co.'s No. 10 Posey-Baker, direct offset to No. 4 Annie Knodel of Magnolia Pet. Co.	T. D. 2,567 ft.; comp. for 637 bbls. on pump.
Gulf Prod. Co.'s No. 11 Posey-Baker, J. R. Robinson Sur.	T. D. 2,571 ft.; drlg.
Magnolia Petroleum Co.'s No. 6 Klein, 300 ft. S No. 3	Location.
Magnolia Petroleum Co.'s No. 5 Knodle, 300 ft. S No. 3.	Location.
Magnolia Petroleum Co.'s No. 15 Thomas Dix	T. D. 2,614 ft.; comp. for 500 bbls. on pump.
Magnolia Petroleum Co.'s No. 7 Rand Miller	T. D. 2,575 ft.; waiting on cement.
F. L. Thomson's No. 2 Posey, 25 ft. from NW line, 300 ft. from No. 1	Location.

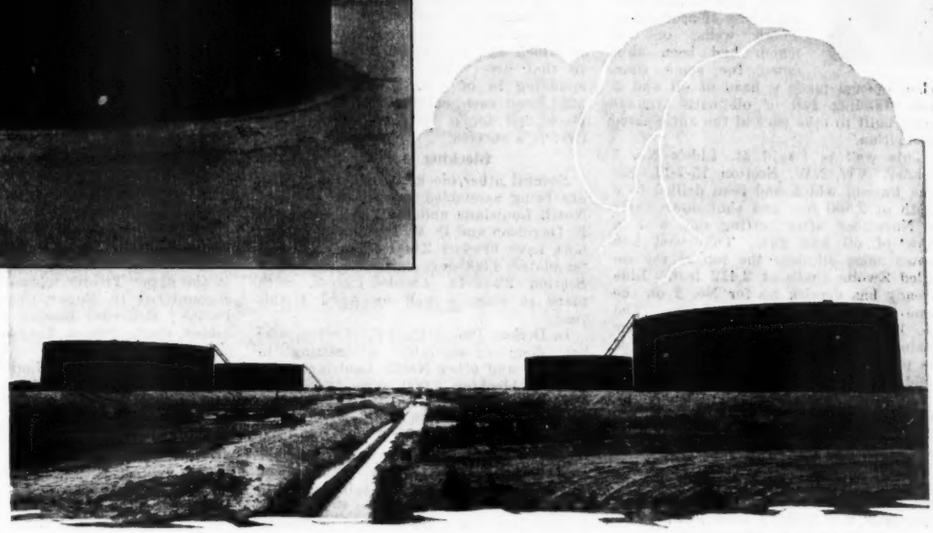
CHAPMAN POOL—WILLIAMSON COUNTY

W. D. Anderson's No. 6-A T. P. Simmons	Rig up and shut down.
W. D. Anderson's No. 8 M. V. Lawrence	Location.
Bartlett & Wilson's No. 2 R. E. Stewart	T. D. 790 ft.; standing.
Bartlett & Wilson's No. 1 R. E. Stewart	T. D. 741 ft.; standing.
Chapman et al's No. 1-D Abbott	Location.
Chapman et al's No. 2-D Abbott	Location.
Chapman et al's No. 5-D Abbott	Location.
Chapman et al's No. 7-D J. C. Abbott	T. D. 200 ft.; shut down.

(Continued on Page 92)



Left: Humble Pipe Line Co. tank at Ingleside, Texas. It was converted from a steel cone roof into a Wiggins Breather Roof. Below: Group of 117-foot diameter tanks at Ingleside, all converted into Breathers.



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Evaporation savings re-pay the cost « «

Replacing existing cone roofs on standing storage tanks with Wiggins Breather Roofs is a case where equipment maintenance can be made highly profitable instead of expensive.

Low pitch steel cone roofs, in good condition, can be converted into Breather Roofs at small cost. The savings from stopping breathing loss repay this cost in a few months. A tank 144 ft. in diameter, storing motor fuel gasoline — for example — loses 1300 to 1600 bbls. annually when equipped with an ordinary "gastight" roof. A Wiggins Breather Roof reduces this loss to 20 to 60 bbls. annually.

The Breather Roof stops thermal breathing loss from standing storage tanks by taking care of volumetric expansion and contraction. No vapor is allowed to escape under ordinary conditions. It is a steel roof, fastened to the top angle of the tank shell and supported by a special type of framing.

Tanks equipped with these roofs may be operated with the tank filled above the top angle so that the roof rides directly on the oil. This increases the storage capacity and reduces corrosion. Since vapor is not vented out, it is obvious that fire hazard is greatly reduced.

Interesting data on evaporation is contained in a new booklet on the Wiggins Breather Roof. Our nearest office will gladly supply you with a copy and estimates on converting your cone roofs to Breathers and on roofs for new tanks.

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Tulsa.....2406 Exchange Bank Bldg.	Cleveland.....2204 Midland Bank Bldg.	San Francisco.....1054 Rialto Bldg.
Birmingham.....1536 Fiftieth St., N.	New York.....3147 Hudson Terminal Bldg.	Seattle.....4323 Smith Tower

WIGGINS ROOFS

Extension Wells in Zwolle Show Oil

Peculiar Field in Louisiana Furnishes More Surprises. Will Drill Close to Shreveport. Blocking Louisiana Acreage

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Jan. 5.—Zwolle, whose chalk rock development has provided many peculiarities since the west Zwolle Field was first opened in November, 1928, was featured again during the last week by the behavior of two wells, each outside present limits of production. These wells, one of which had been shut down for some time, when opened made a head of oil and is now standing full of oil with tankage being built to take care of the anticipated production.

This well is David M. Lide's No. 1 Ponder, NW NW, Section 15-7-11, Sabine Parish, which had been drilled to a depth of 2,800 feet and shut down early in November after testing dry with a show of oil and gas. This well had shown some oil near the top of the so-called Zwolle chalk at 2,412 feet. Lide already has derrick up for No. 2 on the same lease in the same quarter. The No. 1 Ponder apparently opens another producing "hickey" 2 miles southeast of the present southeast part of the Zwolle Field.

The other well which headed during the week was Lacey Production Co.'s No. 1 Cooper, SW NE, Section 30-8-11, a half mile east of the Zwolle east field proper. This well which had been standing for several weeks with several hundred feet of oil in the hole headed, and apparently will make a good pumper.

Drill Close to Shreveport

Probably the second most important development in the Shreveport territory during the week was announcement of plans for a test of the old Cedar Grove area just south of the city limits of Shreveport where a promising gas field was believed to have been ruined early in 1917 by acts of sabotage by members of the I. W. W. who are said to have flooded the wells with water ruining several promising tests. David and Askew are now blocking 1,200 acres centering 2 miles northwest of the village of Lucas, Caddo Parish, and expected to drill a test in the northwest quarter of Section 33-17-13 to a depth of at least 2,500 feet. A thorough test will be given both the Nacatosh and the Blossom sands, neither of which has been given a thorough test in that area. The leases call for the spudding in of a test by February 1, 1931, and each of the 12 leases in the block call for a test in the event the first is a success.

Blocking Acreage

Several other blocks of wildcat acreage are being assembled in various parts of North Louisiana and south Arkansas. R. E. Davidson and D. M. Perkins of Shreveport have blocked 2,500 acres of a contemplated 4,000-acre spread centering in Section 22-16-13, Caddo Parish, with plans to start a well by April 1 this year.

In DeSoto Parish Paul C. Warren, who has done considerable wildcatting in Webster and other North Louisiana parishes is blocking 2,000 acres in Section 16-12-16, DeSoto Parish, 2½ miles north of Logansport for a 3,500-foot test.

In Union County, Arkansas, in the Lawson-Urbana district where there are now seven oil wells, the majority of which are also producing salt water, is blocking 600 acres in Section 6-18-13 for a 3,100-foot test. The present producing horizon in Lawson-Urbana is from 3,500 to 3,600 feet in depth.

Completions were at a low ebb during the week, due in part to the holiday lull. Palmer Corp. completed No. 1 Johnson, NE NE, Section 24-17-12, Sligo district, Bossier Parish, as a 1,323,000-foot gasser at 1,750 feet after plugging back to 1,715 feet and perforating casing, old total depth having been 2,694 feet.

In the shallow Hosston Field of Caddo Parish, Bayou State Oil Corp.'s No. 6 Barr, SE SE, Section 30-22-15, is pumping 8 bbls. of oil and 25 bbls. of salt water from total depth of 1,140 feet.

A wildcat in Caldwell Parish is arousing some interest. This is Hudson and others' No. 1 Burton, Section 35-12-2e, which is shut down below 2,600 feet after he penetrated what the owners say was a sulphur formation. This test is practically on a line between the Richland gas field and the Urania oil field and has been the scene of considerable geophysical study in recent months.

Prairie's Deep Test

Prairie Oil & Gas Co.'s No. 1 Shackelford, SE NE, Section 30-23-5, Claiborne, is drilling red shale at 4,330 feet in what is planned as a 5,000-foot test. Nothing in the way of oil or gas was encountered in the oolitic lime or other formations of the upper Trinity where pay has been encountered in Sugar Creek, Claiborne Parish; Bellevue, Bossier Parish; Pine Island, Cadlo Parish, Louisiana; or Panola County, East Texas. Another wildcat in the same parish, Louisiana Oil Refining Corp.'s No. 10 Langston designed as a 4,000-4,500 feet test, is planning to set 9-inch casing at 2,438 feet. National Drilling Co.'s No. 1 Marsh McMillian, Section 26-9-6e, Catahoula Parish, east central Louisiana, has shut down at 3,086 feet. It is a wildcat.

The Ouachita Parish part of the Monroe gas field added a small gasser when Louisiana Gas & Fuel Co.'s No. 4, Section 2-19-3e, was completed at 2,181 feet with 935 pounds rock pressure gauging 4,392,000 feet of gas. The Richland Parish gas field accounted for a small gasser in State Line Oil & Gas Co.'s No. 1-A Boughton, NW SW, Section 33-16-6e.

The old Pleasant Hill Field of Sabine Parish which has been somewhat crowded out of the picture by developments in Zwolle in the same parish, added a producer when F. A. Bartlett, Jr.'s No. 1 Logan, SE NW, Section 27-10-12, was completed at 2,959 feet making 25 bbls. of oil along with 1,000,000 feet of gas.

Production

Average daily production week ending January 3:

NORTH LOUISIANA	
Caddo, light	8,165
Caddo, heavy	2,695
Homer	3,200
Haynesville	5,420
DeSoto-Red River	3,770
Elm Grove	510
Bellevue	550
Cotton Valley	1,780
Urania	5,020
Pleasant Hill	440
Sarepta-Carterville	1,800
Zwolle	8,380
Holly	1,010
Total	41,740
Last week	42,000
Decrease	260
ARKANSAS	
El Dorado	3,900
Smackover, light	4,250
Smackover, heavy	34,150
Stephens	870
Nevada County	1,000
Lisbon	820
Champagnolle	3,710
Bradley	65
Mount Holly	65
Urbana	950
Total	49,780
Last week	50,970
Decrease	1,190
Both states	91,520
Last week	92,970
Decrease	1,450

Eight New Locations

Although Zwolle had but one completion during the week, that being Wheatcrot and others' No. 1 Sabine Lumber

(Continued on Page 96)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

BIENVILLE PARISH

Company, farm and location—	Remarks—
Coyle Bros.' No. 1 Lawhon, 300 ft. N, 300 ft. E, SW cor. SE NE, Sec. 15-16-8	Cored sandy lime 2,205-16 ft.
S. P. Borden's No. 1 Thomas, 330 ft. S, 330 ft. E, NW cor., Sec. 27-16-9	Drlg. hard lime 4,850 ft.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14	S.D. fuel 1,576 ft.
Rombaugh et al's No. 1 Allison, SW SE, Sec. 10-19-13	Set 6⅝-in. 1,031 ft; dry; arranging to deepen; T.D. 1,100 ft.

CADDO PARISH

R. H. Libby's No. 1 Foster (was Gooch et al's), Sec. 29-15-16	Cmtd. 12½-in. 60 ft; S.D. 1,600 ft.
Tex.-La. Prod. Co.'s No. 1 French, 1,270 ft. N, 675 ft. E, SW cor. NW, Sec. 34-23-16	Drlg. anhydrite 5,188 ft.
Tex.-La. Prod. Co.'s No. 1 Wall, 2,175 ft. N, 1,980 ft. W, SE cor., Sec. 33-23-16	Drlg. hard lime 5,050 ft.

CALDWELL PARISH

Hudson et al's No. 1 Burton, Sec. 35-12-2e	S.D. 2,600 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6	Tested S.W; W.O. 3,086 ft.

CLAIBORNE PARISH

Baird Bros. et al's No. 1 Whittaker, 600 ft. N, 400 ft. W, SE cor. NE, Sec. 30-20-7	S.D. 2,200 ft.
Baugh et al's No. 1 Alexander, 330 ft. S, 330 ft. W, NE cor., Sec. 27-20-3	S.D. 2,200 ft.
Prairie O. & G. Co.'s No. 1 Shackelford, 331 ft. S, 327 ft. E, NW cor. SE NE, Sec. 30-23-5	Drlg. red shale 4,330 ft.

CONCORDIA PARISH

La. G. & F. Co.'s No. 2 Saunders, 755 ft. S, 2,155 ft. E, NE cor., Sec. 11-8-9, in Sec. 42-8-9	Coring 1,444 ft.
Joe Marr et al's No. 1 Maxwell, C, Sec. 35-3n-8e	S.D. 3,622 ft.

DE SOTO PARISH

J. W. Clark's No. 1 Tidwell, 250 ft. S, 250 ft. E, NW cor. NW, Sec. 22-13-14	Plugging back to 3,125 ft; wtr. shutoff failed; W.O; T.D. 3,130 ft.
S. A. Guy's No. 1 Dowling Bros., 469 ft. E, 382 ft. S, NW cor. NE, Sec. 21-14-14	S.D; sandy shale 1,354 ft.
Keatchie O. & G. Co.'s No. 1 Hallie Smith (was H. E. Weichert's), NE SE, Sec. 31-14-15	S.D; hard chalk 2,123 ft.
C. D. Neff et al's No. 1 H. P. Dowling, 240 ft. N, 240 ft. W, SE cor., Sec. 18-13-14	Drlg. hard chalk 1,700 ft.
C. D. Neff et al's No. 1 Ramsey, 1,000 ft. W, 400 ft. S, NE cor. SE, Sec. 33-13-15	Derrick.

LA SALLE PARISH

La. G. & F. Co.'s No. 2-B Tensas, 1,980 ft. W, 1,321 ft. S, NE cor., Sec. 23-7-4	Arranging D.S. test 1,879 ft.

(Continued on Page 91)

LOUISIANA-ARKANSAS PROVEN AREAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

BOSSIER PARISH—BELLEVUE

Company, farm and location—	Remarks—
H. I. Morgan et al's No. 10-B Kendricks, 1,720 ft. E, 1,120 ft. N, SW cor., Sec. 22-19-11	O.W.D.D; completed Nov. 13, 1930; 41,760,000 ft. gas, 760 rock, 1,750 ft; rigging up to deepen.

BOSSIER PARISH—CARTERVILLE

Del.-La. Dev. Co.'s No. 6 Bollinger, 330 ft. S, 220 ft. W, NW cor., Lot 17, in Lot 16, Sec. 31-23-11	Hole full oil; W.O.S.R; 15 ft. broken sand; T.D. 3,217 ft.
Palmer Corp.'s No. 2 Roberson, 330 ft. N, 330 ft. E, SW cor. NW NE, Sec. 26-23-12	Derrick.

BOSSIER PARISH—SLIGO

Palmer Corp.'s No. 1 Schnitt, 660 ft. S, 660 ft. E, C, Sec. 14-17-12	D.S. test 1,963 ft; 5,000,000 ft. gas; cmtd. 6⅝-in.

CADDO PARISH—GREENWOOD

Calatex O. & G. Co.'s No. 1 Edgar, 1,460 ft. S, 1,900 ft. E, NW cor., Sec. 17-16-16	Location.
Calatex O. & G. Co.'s No. 1 McAnn-Alfred, 1,310 ft. S, 970 ft. E. NW cor., Sec. 17-16-16	Location.
Junior O. & G. Co.'s No. 1 Brend, 1,980 ft. W, 1,320 ft. N, SE cor., Sec. 9-18-16	Drlg. 2,150 ft.

CADDO PARISH—OIL CITY

The Texas Co.'s No. 75 Levee Board, 2,450 ft. S, 224 ft. W, NE cor., Sec. 33-21-16	W.O.S.R. 1,835 ft.

CADDO PARISH—PINE ISLAND

Haynes Bros.' No. 2 Spell, 956 ft. W, 200 ft. N, SE cor. SE, Sec. 15-21-15	Tested 1,000,000 ft. gas 3,650 ft; show gas and S.W. 3,655 ft; arranging to deepen.
The Texas Co.'s No. 8 J. F. Herndon, 990 ft. N, 990 ft. W, SE cor. SW, Sec. 14-21-15	Drlg. red beds 2,876 ft.

CLAIBORNE PARISH—HOMER

La. Oil Ref. Corp.'s No. 1 Langston, 660 ft. S, 528 ft. E, NW cor. SW SW, Sec. 19-21-7	Reaming; set 9-in. 2,438 ft.

DE SOTO PARISH—HOLLY

Standard Oil Co.'s No. 1 Hoell, 264 ft. E, 170 ft. N, SW cor., Sec. 32-14-13	Drlg. shale and gumbo 2,076 ft.

LA SALLE PARISH—URANIA

Montagu Oil Co.'s No. 11 Zenoria Lbr. Co., 660 ft. S, 660 ft. W, NE cor.	Began drlg. Nov. 25; cmtd. 10-in. 105 ft; 6-in. 1,491 ft; W.O.S.R. 1,513 ft.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4	Location.

OUACHITA PARISH

Bahan & Bahan's No. 1 Fabollo, 660 ft. S, 660 ft. W, NE cor., Sec. 35-19-3	S.D. 1,200 ft.

(Continued on Page 90)

Thousand

hundred *and* twenty-six days!

CONSIDER an *unconditional* guarantee on a gauge for five full years! Such a thing was unthinkable until we produced the DURAGAUGE.

You get such a guarantee . . . . *unconditionally* . . . . with *every* Ashcroft American DURAGAUGE. Think what that means under any severe service condition!

We can do this because we have made the movements out of indestructible nitralloy steel; because we have bored the Bourdon tubes out of solid, special alloy steel, heat-treated for extreme strength; because all tube connections are metal to metal, leak-proof joints; because the socket is of drop-forged steel; because the case is moisture-proof.

Built for severe service, the DURAGAUGE *won't* wear out, and is twice as accurate. Made in three models . . . for wall mounting, for flush mounting, and for flush mounting with illuminated dial . . . for all pressures up to 5000 lbs. Accuracy is guaranteed within ½ of 1% over the entire scale range.

CONSOLIDATED ASHCROFT HANCOCK CO., INC.
Bridgeport, Conn.
Subsidiary of Manning, Maxwell & Moore, Inc.

American Tachometers	J-5	Hancock Bronze Valves	WB-5
Ashcroft Power Control Valves	M-5	Hancock Cast Steel Valves	WA-5
Consolidated American Safety and Relief Valves	Z-5	Hancock Forged Steel Valves	W-5
		American Dairy Instruments	Q-5

Curtailment Cuts California Production

Situation at Playa Del Rey Not Satisfactory as Some Operators There Are Not Co-operating. Lack of Storage Felt

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Jan. 3.—Crude oil production in California, reflecting the new curtailment program which contemplates reducing state production to 500,000 bbls. per day, registered another substantial decline during the past week. It remains to be seen, however, just how effective this new program will be as operators still have a long way to go before reaching the new objective. Long Beach, Santa Fe Springs, Belridge, Ventura Avenue and several other small fields were still producing in excess of their respective allotments at the close of December, but more effective enforcement is expected within the next few days and this should result in additional curtailment.

The situation at Playa Del Rey is still unsettled but this field may be drawn into the curtailment program within a short time as a majority of operators in that field are sympathetically inclined toward the conservation movement and have signified their intention of reducing production as soon as the field is lined up. Several operators, however, have consistently refused to curtail production and their attitude has prevented the curtailment program from being enforced in that field. Production at Playa Del Rey registered a substantial decline during the past week due to a combination of circumstances, and a further reduction is not at all improbable. Peak production was reached by this field a few weeks ago and a part of the drop registered during the past seven-day period can be attributed to the customary normal decline. The biggest factor in the drop shown by Playa Del Rey during the past week has been the inability of operators to dispose of current production. Approximately 25 wells were shut down early in the week due to the inability to sell production. This is in spite of the fact that both the Union and Standard have signified their willingness to afford all producers an outlet for current production provided that field production is curtailed to the maximum allotment established for the field.

Heretofore operators at Playa Del Rey have been able to dispose of current production to independent refiners but this outlet has been gradually restricted due to the fact that the limited storage facilities of the independent group are just about filled to the maximum. Crude oil from Playa Del Rey is still being offered for sale all the way from 25 cents per barrel and upward, with vey few buyers taking advantage of the situation because of the shortage of storage space.

California wound up 1930 with a daily production considerably below that at the beginning of the year and, while 1931 has been ushered in with a still lower production, there is no assurance that this favorable condition will continue for any great length of time due to deep zone exploitation in the Lost Hills-Belridge Fields of Kern County and the possibility of deeper drilling in other areas. The general production trend in California has been downward since the latter part of last year, except for a short period in February, 1930, when an increase was registered. This increase was due to the fact that several flush fields were given six days' open flow tests in order to determine their actual potentials as far as possible. The decline in production registered during 1930 is due to a large extent to the aggressive curtailment program in effect during the period in question, although a normal substantial decline in flush fields was also an important contributing factor.

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	66,690	997,250
Fuel oil	.....	.....	.....	.....	71,950	468,825
Diesel and gas oil	117,000	16,714	74,296	10,614	4,097,796	3,243,568
Gasoline	526,322	75,189	449,868	64,267	19,363,695	20,863,279
Kerosene	.....	.....	.....	.....	.....	49,750
Naphtha distillate	.....	.....	.....	.....	.....	31,750
Coastwise—						
Crude oil	442,000	63,143	162,013	23,145	15,477,051	24,960,161
Fuel oil	488,611	69,802	412,348	58,907	18,976,194	19,714,281
Diesel and gas oil	5,311	759	10,525	1,504	1,635,433	1,258,416
Gasoline	273,239	39,034	268,564	38,366	12,716,564	11,488,671
Kerosene	.....	.....	9,334	1,262	166,262	72,997
Exports—						
Crude oil	2,598	371	143,439	20,491	6,911,773	5,913,632
Fuel oil	274,641	39,234	362,108	51,730	17,421,100	19,036,483
Diesel and gas oil	152,984	21,855	61,068	5,724	4,342,519	2,838,234
Gasoline	82,925	11,846	163,813	23,402	15,253,026	12,488,335
Kerosene	.....	.....	.....	.....	3,228,711	3,212,236
Lubricants	.....	.....	.....	.....	59,179	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	279,088	.....
Gasoline	.....	.....	.....	.....	1,144,921	2,275,638
Kerosene	.....	.....	.....	.....	10,750	.....
Lubricants	.....	.....	.....	.....	27,796	133,706
Coastwise—						
Fuel oil	64,000	9,143	107,918	15,417	3,434,247	3,103,863
Diesel and gas oil	.....	.....	5,998	857	362,474	366,004
Gasoline	42,819	6,117	49,376	7,054	4,355,915	5,306,260
Kerosene	2,516	359	.....	.....	222,235	207,802
Exports—						
Crude oil	.....	.....	.....	.....	59,993	126,528
Fuel oil	55,380	7,911	57,262	8,180	1,161,782	841,631
Diesel and gas oil	.....	.....	.....	.....	539,646	393,132
Gasoline	87,091	12,442	84,014	12,002	4,191,456	5,425,387
Kerosene	.....	.....	.....	.....	593,097	624,180
Lubricants	.....	.....	.....	.....	33,579	34,575

Playa Del Rey

Umpire Neal Anderson is experiencing considerable difficulty in securing signatures to the statewide curtailment program, as far as Playa Del Rey is concerned, and very little headway has been made during the past few days. Other fields throughout the State, with a few exceptions, are already either down to their allotted production or expected to reach that objective shortly, with the result that Playa Del Rey is about the only hold-out of any consequence. The attitude of operators in this field is one of hostility toward curtailment and this opposition is seriously jeopardizing the future price structure. The output of this field has already resulted in substantial reductions in the retail price of gasoline in southern California and this condition will undoubtedly result in a downward revision in crude and refined oil schedules early in 1931 unless this situation is corrected very shortly.

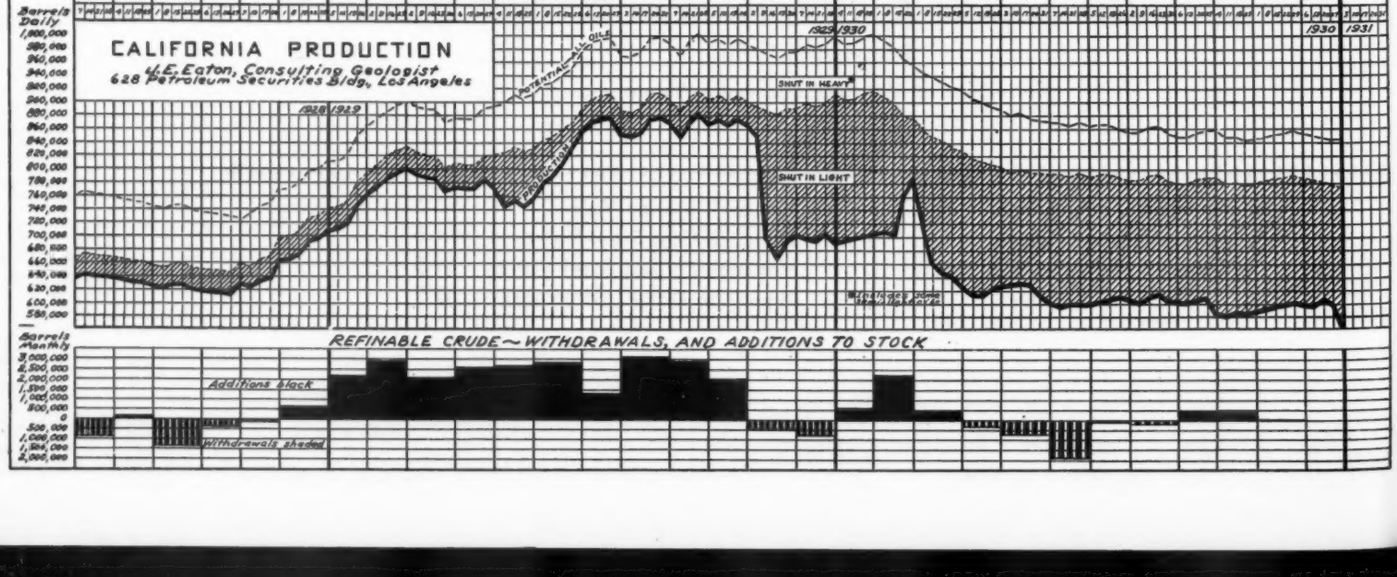
The financial difficulties confronting many operators in the Playa Del Rey Field would be greatly alleviated by the initiation of a comprehensive intelligent curtailment program, as this would have a tendency to stabilize the price of crude oil in that area and afford operators an outlet for production. Substantial quantities of Playa Del Rey crude are being sold at 25 cents per barrel, whereas this oil would bring 84 cents per barrel if the curtailment recommended was put into effect.

The Ohio Oil Co. finished two new wells in the Playa Del Rey Field during the past week, one of which was the largest completion listed during the period in question. This was No. 4 Recreation, which registered an initial daily production of 2,530 bbls. from the deep zone at 5,450 feet. No. 7 Recreation, finished in the shallow Del Rey zone, was only good for 230 bbls. per day from 3,943 feet, the hole having been finished with a 6⅝-inch liner carrying 630 feet of perforated. The Union Oil Co. finished its third producing well in the Playa Del Rey Field when No. 3 Townsite was brought in under a natural flow doing 1,205 bbls. of 23.6 gravity oil per day from 5,855 feet. This new well bottomed in the Schist, topped the conglomerate at 5,701 feet and was finished with an 8⅝-inch water string landed at 5,601 feet and a 6⅝-inch liner carrying 230 feet of perforated.

The Venice Oil Syndicate's No. 7 Del Rey, completed in the Del Rey zone at 4,515 feet with the 8⅝-inch water string cemented at 3,426 feet, was brought in a few days ago flowing 730 bbls. of 22.9 gravity oil per day. The Santa Catalina Oil Co. finished its first producer in this field when No. 1 Adeline was completed doing 301 bbls. initially from 4,501 feet, the hole having been finished with a 4½-inch liner including 920 feet of perforated. The Rich Petroleum Co.'s No. 1 Swartz, another new well listed for completion this week, was brought in flowing 468 bbls. of 23.4 gravity oil per day from the Recreation zone at 4,425 feet, the 8⅝-inch water string having been landed and cemented at 3,582 feet. The Black Gold Petroleum Co. failed to secure a natural flow in No. 2 Heeney, which was bottomed in the Del Rey zone at 4,654 feet and finished with a 6⅝-inch liner carrying 1,101 feet of perforated, and this project will probably be put on the beam some time within the next few days.

Long Beach

Operators in the Long Beach Field have reduced current production to such



an extent that they have just about reached the new allotment set for that field under the revised curtailment program. The amount of new production which has been added in this field from time to time makes it extremely difficult to hold current production to a definite pegged figure. Satisfactory progress has been made, however, and indications are that Long Beach producers will continue to enforce curtailment rigidly.

There were only two new wells finished in the Long Beach Field during the past week, but a check indicates the probable completion of several more in the near future. The new wells chalked up during the past seven-day period were the M. & A. Oil Co.'s No. 2 Painted Hills and the Young Petroleum Co.'s No. 2 Hilton. The former, bottomed at 5,658 feet and finished with a 9-inch water string cemented at 4,782 feet and a 6⅝-inch liner landed on bottom, came in under a natural flow doing 1,260 bbls. of exceptionally clean 27.6 gravity oil per day. The latter well was finished in the shallow zone at 4,643 feet and, while it was necessary to put it on the beam, it was good for 340 bbls. of 25.1 gravity oil daily.

The status of the new deep zone found by the Superior Oil Co. in the Huntington Beach town lot area has not yet been definitely determined but developments within the next 10 days may clear up the matter somewhat. The Superior's deep test, No. 1 fee, came in flowing salt water on a production test recently and, while this showing has taken the edge off some of the enthusiasm, it might not be amiss to call attention to the fact that this production test was not conclusive evidence one way or the other. The water string in this well froze approximately 100 feet above the point at which it was scheduled to be landed with the result that the salt water which came into the well may have been located above the oil strata. This will probably be determined shortly as the Transport Oil Co., on the recommendation of the Superior Oil Co., has landed and cemented a water string at 7,100 feet. The Superior apparently feels confident that it has discovered a new deep zone in the town lot area as the company has staked a new location within the last few days and will probably proceed with additional developments if the Transport Oil Co. effects a satisfactory water shut off. Developments in this area during the next few weeks should be watched very closely because if substantial production is developed it will undoubtedly exert a very favorable effect on the existing curtailment program. This does not mean of course that the curtailment program will be entirely voided because state officials will undoubtedly enforce the gas conservation law, recently held constitutional. Intensive drilling in this town lot area might possibly cause considerable difficulty, however, and ultimately lead to a price cut if field production reaches any serious proportions.

Ventura Avenue

The Associated Oil Co. successfully finished No. 53 Lloyd, a new well in the prolific Ventura Avenue Field during the past week, and this new producer, bottomed at 7,850 feet, has been beaned in to 730 bbls. per day. Four other wells are nearing completion in this field at the present time and this quartet, consisting of Nos. 40 and 89 on the Associated's Lloyd lease and Nos. 59 and 61 on the Taylor lease of the Shell, may be tanking oil within the next 15 days. The Bolsa Chica Oil Co. may also complete a new well in this field shortly as it has successfully sidetracked a fish in No. 5 Hartman. This well, which was carried down to 7,325 feet, has been standing suspended for more than a year due to water trouble which is believed to be coming from the bottom of the hole. It is the present intention to conclude drilling at approximately 7,100 feet and it would not be at all surprising if the company brought in a 500-bbl. well.

The General Petroleum recompleted No. 2 Ferguson, a tideland project in the Rincon Field of Ventura County, after redrilling and cleaning out the hole to 3,220 feet. This well, bottomed at 3,580 feet, was returned to production flowing 340 bbls. of 29.4 gravity oil cutting 2 per cent. The General Petroleum is making preparations to start two new wells in this field, one of which will be located on the Needham tideland permit No. 55. This well, which will be located approximately 1,200 feet from the tide line, is located at the end of a pier recently constructed at right angles from the company's Ferguson pier. Drilling operations in the Elwood Field of Santa Barbara County are practically nil at the present time. Only one well is under way in this field and this project, No. 1 Bishop-Evans of the Barnsdall and Rio Grande, is an outpost in the eastern end of the field, being drilled for the purpose of determining the outer limits of production in this section. There are no tideland projects under way except possibly well No. 7 on state permit No. 88, which has been hung up for some time with mechanical trouble. The Palisades Petroleum Co. is constructing a rig for No. 3 Meigs, a new well scheduled for early work in the Mesa district of Santa Barbara County. This well is located in close proximity to No. 2 Meigs, a recent completion brought in flowing 1,000 bbls. per day from 2,116 feet. Production in this field is not expected to be much of a factor due to the absence of pipe line facilities and the probability that the oil zone is rather limited in scope.

May Open New Field

The Bolsa Chica's promising wildcat at Coal Oil Point in Santa Barbara County has become the cynosure of all eyes because of the extremely favorable showing which it has made up to the present time. This well, barring the development of mechanical trouble, will in all probability result in the discovery of either a new oil or gas field 2 miles east of the prolific Elwood Field. The Bolsa Chica has already cored 70 feet of oil sand below the water string which has already been landed. Considerable difficulty has been experienced in taking cores because of the extremely high gas pressure but the company is not taking any chances and as a result is proceeding slowly and coring every foot of the way. Approximately 2,500 feet of 3-inch pipe has been strung from the well in question to storage tanks located on the shore back of the well. Two 3,000-bbl. steel tanks have been erected and if commercial production is developed it is the present intention to hook up these tanks with the Rio Grande's submarine pipe line at Elwood in order to facilitate deliveries. The Bolsa Chica apparently controls practically all of the possibly productive acreage and will consequently benefit to a substantial degree. It is not at all improbable, however, that a portion of the Campbell Ranch may be found productive as the nearest point is only 1,000 feet north of the company's tideland wildcat.

Wildcats Abandoned

Wildcat mortality was unusually high in California during the past week as a number of tests in various parts of the State were abandoned as dusters. The Standard Oil Co. abandoned its No. 1 Piedmont at King City in Monterey County as a duster at 6,093 feet and this well, located in Section 23-22-7, is regarded as a conclusive test. The Union Oil Co. also drilled a duster in this general locality during the past year and abandoned it several months ago. In the Edison district of Kern County, the Pe-

(Continued on Page 96)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well location—	S-T-R	Depth	Status—
Olympic Realty Corp., No. 1 Barnes, Los Angeles Co.	14- 2-15	4,875	cleaning out
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9- 2-15	rig	suspended
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	3,870	sd. sh. drilling
Dwyer & Becker, No. 1 Compton, Los Angeles Co.	17- 3-13	4,520	cleaning out
Allison Synd., No. 1 Baldwin, Los Angeles Co.	8- 2-14	3,418	hd. sd. drilling
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,396	suspended
Cal. Ventura Oil Co., No. 2 Hermosa, Los Angeles Co.	31- 3-14	3,300	cleaning out
Cal. Ventura Oil Co., No. 3 Hermosa, Los Angeles Co.	31- 3-14	rig	suspended
Staple Oil Co., No. 1 Manhattan, Los Angeles Co.	24- 3-15	rig	suspended
Westwood Pet., No. 1 Hermosa, Los Angeles Co.	6- 4-14	rig	suspended
Wolfe, George, No. 1 Hermosa, Los Angeles Co.	6- 4-14	rig	suspended
Wood, C. L., No. 1 Hawthorne, Los Angeles Co.	10- 3-14	1,284	suspended
Alondra Co., Ltd., No. 1 Hawthorne, Los Angeles Co.	23- 3-14	rig	suspended
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12- 3-14	4,665	suspended
McKeon Drlg. Co., No. 1 Watts, Los Angeles Co.	1- 3-14	3,405	sd. sh. drilling
Shelley, C. M., No. 1 Torrance, Los Angeles Co.	12- 4-14	rig	suspended
Shell, No. 1 Van Nuys, Los Angeles Co.	19- 2-15	6,005	abandoned
Mack Oil Co., No. 1 Chatsworth, Los Angeles Co.	6- 2-16	rig	suspended
San-Van Oil Co., No. 1 Van Nuys, Los Angeles Co.	14- 1-16	1,460	gr. sd. drilling
Rio Hondo Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	3,726	suspended
Rucker & Smith, No. 2 Puente, Los Angeles Co.	27- 2-10	rig	suspended
Bardeen Pet., No. 2 Puente, Los Angeles Co.	2- 2-10	1,477	sd. sh. drilling
Vega Pet. Corp., No. 1 Puente, Los Angeles Co.	14- 2-10	2,398	sd. sh. drilling
Arden Oil Co., No. 1 Puente, Los Angeles Co.	15- 2-10	3,325	suspended
D. & B. Oil Co., No. 1 Puente, Los Angeles Co.	3- 2-10	4,620	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30- 2- 9	1,092	suspended
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	3,100	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30- 2-12	695	sd. sh. drilling
The Texas Company, No. 1 Montebello, Los Angeles Co.	4- 2-12	rig	rigging up
Celite Oil Co., No. 1 Monterey Park, Los Angeles Co.	28- 1-12	5,278	suspended
Wolfe, Geo., No. 1 Alhambra, Los Angeles Co.	24- 1-13	1,269	recemented
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	2,280	suspended
Rancho Oil Co., No. 1 Rosemead, Los Angeles Co.	30- 1-11	1,110	sd. sh. drilling
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,695	cleaning out
Nesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	30- 6-10	790	suspended
Gesell, T. F., No. 1 Newport, Orange Co.	29- 6-10	701	sd. sh. drilling
Standard, No. 1 Newport, Orange Co.	26- 6-10	3,200	hd. sd. drilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,519	suspended
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	20-16- 3	4,175	suspended
Carr, O. K., No. 1 Capistrano, San Diego Co.	13- 8- 8	5,250	hd. sd. drilling
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,392	suspended
San-Col Oil Co., No. 1 Colton, San Bernardino Co.	18- 1- 4	240	suspended
Western Gulf, No. 1 Santa Ana, Orange Co.	12- 3- 8	1,291	br. sh. drilling
The Texas Company, No. 1 Olive, Orange Co.	7- 4- 9	1,010	sd. sh. drilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well location—	S-T-R	Depth	Status—
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	6,819	fishing
Fields Gas Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	5,570	suspended
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	5,000	br. sh. drilling
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	6,050	sd. sh. drilling
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-33	1,800	cemented
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas—shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	gas—shut in
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	3,850	br. sh. drilling
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	1,016	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	1,026	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	1,035	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	4,119	oil sand
Caldwell Brown, No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,040	suspended
Cochran, J. H., No. 1 Naples, Santa Barbara Co.	7- 4-29	4,780	suspended
Johnson, George, No. 1 Goleta, Santa Barbara Co.	X- 4-28	4,089	suspended
Prairie Oil Co., No. 1 Orella, Santa Barbara Co.	32- 5-30	1,277	sd. sh. drilling
Cuyama Oil Corp., No. 1 Cuyama, Santa Barbara Co.	12-10-27	rig	rigging up
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	5,500	suspended
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Prairie Oil & Gas Co., No. 1 Ventura, Ventura Co.	30- 3-22	8,040	br. sh. drilling
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
Continental, No. 1 Rincon, Ventura Co.	23- 3-24	....	bldg. road
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	2,591	cleaning out
Superior Oil Co., No. 1 Sespa, Ventura Co.	14- 4-21	4,088	sd. sh. drilling
Lockwood Valley Oil Co., Well No. 1, Ventura Co.	32- 8-21	675	suspended
Nordon Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	6,590	sd. sh. drilling
Superior Oil Co., No. 1 Buttonwillow, Kern Co.	32-29-25	3,595	sd. sh. drilling
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	20-31-24	5,230	cemented
General Pet., No. 1 Belridge, Kern Co.	30-28-21	3,640	redrilling
The Texas Company, No. 1 Belridge, Kern Co.	22-27-20	3,450	sd. sh. drilling
Richfield, No. 1 Belridge, Kern Co.	20-27-20	6,225	br. sh. drilling
Standard, No. 1 Belridge, Kern Co.	31-27-20	4,120	sd. sh. drilling
Ohio Oil Co., No. 1 Belridge, Kern Co.	36-27-20	4,590	br. sh. drilling
Union, No. 17 Belridge, Kern Co.	36-27-20	3,177	br. sh. drilling
Rio Grande, No. 1 Belridge, Kern Co.	18-28-22	3,680	abandoned
Reward Oil Co., No. 1 Belridge, Kern Co.	34-27-20	3,005	sd. sh. drilling
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	4,050	sd. sh. drilling
Rio Cal. Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	suspended
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	6,675	hd. sd. drilling
Shell, No. 2 Weed Patch, Kern Co.	29-30-29	4,850	sd. sh. drilling
Shell, No. 3 Weed Patch, Kern Co.	32-30-29	mtl.	building rig
Mohawk Oil Co., No. 1 Weed Patch, Kern Co.	32-30-29	5,475	sd. sh. drilling
Pet. Sec., No. 1 Edison, Kern Co.	14-29-29	4,242	abandoned
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	suspended
Sayre, F. M., No. 1 Edison, Kern Co.	5-30-29	4,220	suspended
Standard, No. 1 Devils Den, Kern Co.	14-25-18	1,674	redrilling
Wellport Oil Co., No. 1 Devils Den, Kings Co.	9-24-17	3,940	suspended
Shell, No. 1 Semitropic, Kern Co.	17-27-23	8,890	hd. sd. drilling
Cities Service, No. 1 Wasco, Kern Co.	16-28-24	1,880	core hole
C. C. M. O. Co., No. 1 Jasmine, Kern Co.	31-28-25	....	location
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	740	hd. sd. drilling
Meridan Oil Co., No. 1 Antelope, Kern Co.	11- 9-15	3,560	suspended
Bardeen, H. A., No. 2 San Emidio, Kern Co.	10-10-23	4,368	abandoned
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	5,260	hd. sd. drilling
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	3,590	reaming
Carruthers Oil Co., No. 1 Fresno, Fresno Co.	4-17-20	rig	suspended
Miracle Oil Co., No. 1 Cuyama, San Luis Obispo Co.	17-10-25	314	sd. drilling
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	4,019	suspended
Latin Amer. Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,525	recemented
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	21-27-11	3,941	suspended
Continental, No. 1 San Miguel, San Luis Obispo Co.	26-25-11	2,780	sd. sh. drilling
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	914	cleaning out
Pismo Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,010	cleaning out
Schockley, C., No. 1 Pismo, San Luis Obispo Co.	13-32-13	2,099	hd. sd. drilling
Standard, No. 1 King City, Monterey Co.	23-22- 7	6,093	abandoned
Pacific Inland, Well No. 1, Monterey Co.	19-23-15	910	hd. sd. drilling
Brown, F. A., No. 1 Parkfield, Monterey Co.	15-23-14	816	suspended
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well—idle
Murphy Oil Co., No. 1 Dudley Ridge, Kings Co.	20-23-20	2,600	sd. sh. drilling
Kettleman Dev. Co., No. 1 Tulare Lake, Kings Co.	32-22-19	....	grading
Kettleman Lakeview, No. 1 Tulare Lake, Kings Co.	11-23-19	1,304	hd. sd. drilling
Furman, T. H., No. 1 Reef Ridge, Kings Co.	36-23-17	1,444	sd. sh. drilling
Seymour, L. W., No. 1 Avenal, Kings Co.	10-23-16	1,148	reaming
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	5,464	sd. sh. drilling
Orinda Pet., Well No. 1, Contra Costa Co.	32- 1- 3	1,350	hd. sd. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	4,495	suspended
Campbell Oil Co., No. 1 Porterville, Tulare Co.	22-22-27	857	suspended
Jennings Synd., No. 1 Porterville, Tulare Co.	8-23-28	510	suspended
Miller & Sylvan, No. 1 Porterville, Tulare Co.	11-23-27	1,030	suspended
Kettleman Trust, No. 1 Porterville, Tulare Co.	21-22-27	940	suspended
Turk & Campbell, No. 1 Porterville, Tulare Co.	34-22-27	1,353	suspended
Enterprise Oil Co., No. 1 Porterville, Tulare Co.	29-23-28	820	suspended
McCoy, W. D., No. 1 Porterville, Tulare Co.	35-21-27	745	sd. sh. drilling
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,060	redrilling
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	800	hd. sd. drilling
Getty Oil Co., No. 1 Nigger Heaven, Yolo Co.	23-12- 3	2,050	suspended
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	3,710	hd. sd. drilling

Core Drill Test Uncovers Gas Sand

Interesting Find in Converse County, Wyoming, May Have Important Results. Hobbs Pool, New Mexico, Has Quiet Week

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Jan. 6.—Drilling operations in the Rocky Mountain area are considerably reduced not only on account of wells in the northern states shutting down for the winter, but of temporary suspensions during the holidays. Drilling wells in the Hobbs Pool and adjacent territory in New Mexico are now down to 10 and no completions or new locations were made the past week. R. D. Compton's No. 1 Vandergriff, in the Twin Hills district in Eddy County, is shut down and probably will be abandoned. The Getty Oil Co.'s No. 6 Dooley, Twin Mounds district, is pumping 150 bbls. of fluid, of which 25 per cent is water. One location in Hidalgo County and a location for a deep test in McKinley County were reported.

Colorado had one completion in the Texas Production Co.'s No. 4 Carstarphen in the Tow Creek Field, a 100-bbl. well, and one new operation in Fremont County is under way.

A core drill hole put down in Converse County, Wyoming, by the Phillips Petroleum Co. to work out the structure struck a flow of 1,000,000 feet of gas and a deep test will be drilled in the spring. The Midwest Oil Co. completed a Sundance sand well in Salt Creek making 683 bbls. the first day. The Argo Oil Co. completed a 5,000,000-foot gas well in Lance Creek and the Circle Oil Co. has a 90-bbl. well making 46 gravity oil in the LaBarge district in Sublet County.

NEW MEXICO

Hobbs Pool—Lea County

Interest in the Hobbs Pool now centers largely in the outcome of the meeting to be held at Santa Fe January 5 to discuss the proposed extension of the proration agreement which expires on January 10. The question of increasing the outlet of the field to 50,000 bbls. daily will be foremost in the discussion, and, while all the operators would like to see this done, the dominant factor is in regard to where a market can be found for more oil. The prevailing opinion is that when the issues are threshed out and fully understood that a satisfactory agreement will be reached.

Routine drilling in the Hobbs Pool includes the following:

The Amerada Petroleum Corp.'s No. 1-C State, NE cor., Section 36-18-37, is drilling at 1,200 feet in the red beds.

Cecil Bordages' No. 1 Hughes, C S half, Section 27-19-38, is fishing for tools at 2,790 feet. Total depth is 4,012 feet.

The Continental Oil Co.'s No. 1-E State, C SE NW, Section 25-18-37, has spudded.

The Landreth Production Co.'s No. 1-C State, NE cor. NW, Section 6-19-38, is bottomed at 3,925 feet and preparing to run the 7-inch. It had a show of gas at 3,725 feet.

The Midwest Refining Co.'s No. 8 Terry, C NW NW, Section 9-19-38, is drilling at 496 feet in the red beds after cementing the 16-inch at 198 feet, and its No. 11 State, C NE SW, Section 5-19-38, is drilling at 1,285 feet in red shale with the 16-inch at 192 feet. Same company's No. 11 Thorpe, C NE NW, Section 10-19-38, cemented the 8⅝-inch at 4,020 feet, and its No. 29 Turner, C SW SW, Section 34-18-38, has resumed drilling after repairing damage by fire and is bottomed at 3,478 feet in anhydrite and red rock.

The National Securities Oil Co.'s No. 1 Linam, NE SE SW, Section 33-18-37, is bottomed at 4,860 feet and fishing for two bits in the hole. This well, which is several miles to the west of production, had 4,000,000 feet of gas and some oil at 3,845-60 feet.

The Tidal Oil Co.'s No. 5 Grimes, NW SE NE, Section 29-18-38, is bottomed at 3,880 feet and running the 7-inch.

Eunice Area—Lea County

The Atlantic Oil Producing Co.'s No. 1 Coleman, SW NE NW, Section 17-21-36, is running the 9⅝-inch at a total depth of 2,953 feet. It topped the brown lime at 2,945 feet, or 65 feet deeper than in the Tidal's No. 1 Coleman, one-third of a mile to the southeast. The Continental Oil Co.'s No. 1-A Lockhart, NE cor., Section 18-21-36, is drilling at 3,300 feet, and the Shell Petroleum Corp.'s No. 1 Coleman, NW cor. SE, Section 17-21-36, is bottomed at 3,692 feet and cemented the 7-inch at 3,619 feet. This is an offset to the Tidal's No. 1 Coleman on the south. The California Co.'s No. 1 Meredith, SE cor. NE, Sectiono 19-21-36, is drilling at 300 feet.

Caprock Area—Lea County

The Western Drilling & Engineering Co.'s No. 1 Bridges, SE cor. NW, Section 17-17-34, is drilling at 4,150 feet.

Lovington Area—Lea County

Galt, Brown and others' No. 1 State, SW NW NW, Section 9-15-35, is shut down for orders at 5,001 feet, contract depth having been reached. It is expected that a new contract will be made to carry it deeper.

Eddy County

R. D. Compton's No. 1 Vandergriff, NW cor. NE, Section 33-19-30, in the Twin Hills district, is shut down for orders at 2,002 feet and probably will be abandoned. This well was drilled to 342 feet last year and abandoned. Last month it was decided to drill it deeper. Lockhart & Co.'s No. 1 Livingston, C SW SW, Section 23-24-28, Pearce Canon district, is drilling at 3,190 feet in black sandy shale. The Getty Oil Co.'s No. 6 Dooley, C NW SW, Section 24-20-29, has been completed at a total depth of 1,353 feet and is pumping 150 bbls. of fluid daily, of which 25 per cent is water. The sand was found at 1,345-53 feet. It is midway between two producers half a mile to the north and the same distance to the south. Flynn, Welch & Yates' No. 59 State, NW cor. NE, Section 5-19-28, Artesia district, is drilling at 1,850 feet. Leonard & Levers' No. 5 State, NE SE, Section 20-17-29, Maljamar area, is drilling at 1,675 feet and had 250,000 feet of gas at 960 feet.

Chaves County

The Warman Oil Trust's No. 1 Seibert, NE, Section 27-13-24, is drilling at 2,030 feet.

Hidalgo County

Thomas and others are reported to have moved a Star rig to Section 5-22s-20w and will spud in January. It is near the Arizona line and 3 miles northwest of the P. O. B. Development Co. well which was abandoned at 1,500 feet.

Valencia County

Thomas B. Harlan and others' No. 1 Harlan, NW cor., Section 5-6n-2e, is drilling at 3,410 feet.

McKinley County

The United Kern Petroleum, Inc.'s No. 1, SW, Section 1-18n-11w, Seven Lakes district, is a location for a test through the Mesa Verde formation and possibly to the Dakota.

San Juan County

The Continental Oil Co.'s No. 24, Section 1-29-19, Rattlesnake, is shut down at 4,336 feet waiting for rock bit cones.

COLORADO

Little progress was made on any of the wildcats in Colorado the past week due to operations being suspended for the holidays. Only one completion was reported, this being the Texas Production Co.'s No. 4 Carstarphen, NE NW NW, Section 5-6n-86, Tow Creek Dome, in Routt County. It was drilled to 3,485 feet and was completed in the Mancos shale. It made 100 bbls. initial on the pump. The location of this well is about one-fourth of a mile south of an igneous plug and it extends the pool about one-sixth of a mile to the northwest. The nearest producer, No. 3 Carstarphen, one-sixth of a mile to the southeast, was completed some time ago at 3,595 feet and made 122 bbls. the first 24 hours.

The only new operation reported was the Continental Oil Co.'s No. 1 Spangler, SE SE, Section 4-20s-69, in the South Florence district, which is drilling at 660 feet. It is being drilled on a Continental lease for Isadore Spangler.

The Continental Oil Co.'s new refinery just north of Denver is being tested out preliminary to beginning regular running of crude to the stills. This is a modern plant in every respect and was constructed just in time to put the company in a favorable position for purchasing any crude which may be produced on the new Greasewood Dome in Weld County. The company has an application for a permit to build a pipe line from the well to the refinery now pending before the state public utilities commission. It is taking the crude from the discovery well at Orchard, at which point it is delivered by the producing company. Crude from the Fort Collins-Wellington district also is being shipped to the new plant.

Weld County

The Platte Valley Petroleum Co.'s No. 1 Patterson, NE SE NW, Section 24-6n-61, Greasewood Dome, the discovery well, has not been drilled any deeper since last reports. The company is conducting some negotiations with major companies for the development of its acreage and marketing the oil, but, pending the completion of a deal, no details are being given out. It is understood that several companies have made proposals and that it is likely one of the offers will be accepted. Whether this will involve a stock control of the company, as reported in local newspapers, is not known at this time. The annual stockholders meeting will be held January 10.

Morgan County

The Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE, Section 16-1n-57, Fort Morgan anticline, was drilling at 3,905 feet on December 27. The Badger Creek Oil & Gas Co.'s No. 1 Kent, SW cor., Section 2-2n-57, Badger Creek Dome, is reported preparing to resume. Rig was up for this test February 1, 1928, and it spudded a few months later. It was drilled to 750 feet when the tools were lost. Lack of funds are said to have been the cause of failure to go ahead. Some time ago the hole was cleared of the tools and is now reported to be in shape to resume. The hole is cased with 70 feet of 20-inch.

Larimer County

The Continental Oil Co.'s No. 3 Scott, SW SE, Section 6-9-68, Wellington Dome, an old producer being deepened from the

(Continued on Page 114)

MT. PLEASANT FIELD CONTINUES TO BE MOST ACTIVE IN MICHIGAN AREA

By Paul A. Elliott

MUSKEGON, Mich., Jan. 3.—Of a total of 63 wells now being carried on weekly scout reports of Michigan only 19 were drilling, 2 spudding, 2 fishing and 40 were shut down on January 1, 1931. Principal activities are in Isabella County where 10 wells are drilling, 1 fishing and only 4 shut down. Muskegon County has but one drilling well, the deep test, with five shut down. Four of the inactive wells in the county are outside the proved Muskegon Field in semiwildcat territory.

The Muskegon Deep Well Syndicate's No. 5 Herman Heinz well, NE NE, Section 8-10n-16w, the first deep test in the proved field, was drilling at 4,460 feet, or 142 feet in the Trenton limestone with little prospects of striking oil or gas in this horizon. As bottom water had not been encountered at this depth, however, drilling will be continued. It is probable that drilling will be continued through the St. Peters formation to the contracted depth of 5,200 feet regardless of success or failure in the Trenton limestone where operators had hoped to find production of some kind in view of results at this depth in other fields.

Wildcats Drilling

Drilling of 10 comparatively new wildcats throughout the State comprises a review of limited activities during the closing week of 1930. These active wells include the following: Johnson Oil Refining Co.'s No. 1 Frank Forrester, NW NE NW, Section 32-1n-15w, Trowbridge Township, Allegany County; Dr. Miles E. Reinhart's No. 1 H. H. Lewis, SW NE, Section 21-18n-3e, Gibson Township, Bay County; McKay and Mercier's No. 6 James A. McKay, NE NE, Section 1-17n-5w, Surrey Township, Clare County; Wolverine Natural Gas Co.'s No. 1 Lars P. Anderson, NW SW NE, Section 16-9n-1w, Elba Township, Gratiot County; F. W. Kehlet and Fred W. Craft's No. 1 Killinger, NW NW NE, Section 15-4n-3e, Conway Township; and A. R. Nelson's No. 1 William F. Zeeb and wife, NE SE, Section 33-2n-5e, Genoa Township, both in Livingston County; Benedum-Trees Oil Co.'s No. 1 Brand, NW NW SE, Section 24-15n-7w, Sheridan Township, Mecosta County; Butler Syndicate's No. 1 Ardell E. Douglas, NW NW, Section 26-13n-12w, Everett Township, Newaygo County; Grayling Development Co.'s No. 16, SE NE, Section 8-17n-8w, Evart Township, Osceola County; and C. R. Smith, trustee's No. 1 John Jorgensen, SE NW, Section 21-22n-9w, Haring Township, Wexford County. One well in Washtenaw County also is fishing.

Two new locations were announced during the week as follows: Hugattie Oil Co.'s No. 1 Budd-Pulver, NE NE, Section 21-5n-1e, Woodhull Township, Shiawassee County, and a well to be drilled by a syndicate comprised of Charles Mitchell, William Saunders and A. H. Smith on a location NE NE, Section 24-24n-7w, Pioneer Township, Missaukee County. Shiawassee County is southeast of the Mount Pleasant Field and Missaukee County is west of Wexford County and on the west side of the State northwest of the Mount Pleasant Field fully 50 miles. The Hugattie Oil Co. is an operator in the Muskegon Field and a Muskegon

(Continued on Page 96)

New Big Lake Well Gaining Every Day

Continued Large Withdrawals from Storage in West Texas. Penn Pool Extended Half Mile South. Wheat Field Well

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Jan. 5.—Reports from West Texas continue to show large withdrawals from storage, this week's daily average from storage amounting to 39,019 bbls., tank car shipments totaling 20,136 bbls. per day, trunk line movements totaling 275,220 bbls. per day, and runs to refineries amounting to 13,577 bbls. per day, all of these different distributions totaling less than the previous period's amounts. West Texas production also took a 5,839-bbl. per day drop this week, over 4,000 bbls. of this coming from Yates and Winkler Counties, while Crane County showed an 850-bbl. per day drop.

Big Lake Oil Co.'s No. 5-C University in the Big Lake Field, Reagan County, is showing up just as several of its deep predecessors as it, too, is gaining in production almost every day. It topped the first gas sand at 8,160 feet, topped the deep pay at 8,405 feet, encountering an increase at 8,470 feet with another at 8,585-8,610 feet and another at 8,635-41 feet. The bottom of the hole is 8,718 feet. The first 24 hours the well flowed 718 bbls.; on January 1 it flowed 925 bbls. in 24 hours and 1,035 bbls. ending 7 a. m., January 2, with 20,985,000 feet of gas. During 24 hours ending at 7 a. m., January 5, it flowed 1,275 bbls. of oil with 24,067,000 feet of gas, making greater and speedier gains than any of the other seven deep producers.

Texon Oil & Land Co.'s (Continental Oil Co.) No. 4-B University will be the next deep well to be brought in in the Big Lake Field as it is now coring in broken lime at 8,140 feet. It will make the ninth deep producer for the field, and the sixth drilled in the field this year. Gravity of the oil of these deep producers ranges from 55° to 63°. The shallowest deep producer is Texon Oil & Land Co.'s No. 2-B which is bottomed at 8,489 feet, and the deepest stands at a total depth of 8,923 feet. It belongs to the Big Lake Oil Co. Five of the deep wells show declines in production since they were tubed, and one is holding to about the same level as before tubing was run. Total daily production of the deep wells run around 12,200 bbls.

Penn Pool Extension

Landreth Production Co.'s No. 5-T University, 440 feet from the north and 2,200 feet from the west line of Section 3, Block 35, came in for an initial production of 229 bbls. after a 300-quart shot from 3,553-3,607 feet this week, bottom of the hole standing at 3,612 feet.

This well extends production almost one-half mile south in the Penn Pool, Ector County, increasing the number of the wells in the pool to 79. This pool is now over 4 miles long and 1½ miles in width, and is defined to the southeast and the northwest.

Ward County saw the completion of two more small wells around the town of Grand Falls, and about 2 miles south of the Shipley Pool. The Alpine Oil & Development companies' No. 2 Boogher came in for 70 bbls. at a total depth of 2,200 feet after topping the pay at 2,145 feet, and Black and Massey's No. 1 Allen made an initial production of 35 bbls. at a total depth of 2,200 feet after topping the pay at 2,143 feet.

The Wheat Field, Loving County, which has been one of the most active areas in West Texas for the past few months, added another producer when the California Co.'s No. 5 Reagan and McElvain was completed for an initial production of 313 bbls. after receiving a 160-quart shot from 4,271-4,312 feet. It topped the pay at 4,302 feet and was drilled to 4,316 feet, but was plugged back to 4,314 feet before given a shot.

Howard-Glasscock Fields

The receivers for the Cosden Oil Co. have nominated 8,000 bbls. per day from the Howard-Glasscock fields, and restored their price to the present posted schedule, the allowable for this district for the current month standing around 24,500 bbls. This nomination will increase the ratable production from all leases. Some time ago the receivers cut the price of crude in this field, but those companies which had wells connected to Cosden lines refused to sell any oil at the lower price. Later the receivers raised the price, putting it back on the gravity basis. The first cut was to 50 cents per barrel for all gravity crudes in the fields. The former outlet has been 17,500 bbls., but the new nominations by Cosden help matters in this area, and it is believed that the companies which disconnected will reconnect to relieve the situation caused when the first cut was made.

The total outlet of the Penn Pool, Ector County, is 8,091 bbls.; the Humble Pipe Line Co. is taking 3,006 bbls. per day of this amount; the Burford Pipe Line Co., 2,140 bbls.; the Gulf Pipe Line Co., 1,813 bbls.; the Cosden Pipe Line Co., 976 bbls.; and the Southern Crude Oil Purchasing Co., which has one well 22 miles north of the Penn Pool, on the Cowden ranch, is running its oil, about 155 bbls. per day, to storage.

Total potential production of the Crane-Upton fields is now rated at 47,580 bbls. daily with an allowable production of 23,129 bbls. There are 593 producing wells in these fields. The potential has increased 200 bbls. over the past two week's allowance, but the outlet is more than 3,500 bbls. less than during that period.

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended January 5

Company, well, farm name, section and block—	Remarks—
ANDREWS COUNTY	
Deep Rock Oil Co. et al's No. 1 Kuykendall, 2,310 ft. from N and E of SW cor., Sec. 24, School Blk. A-46	Drlg. 1,750 ft.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E, Sec. 11, Blk. A-46	Top pay 4,335 ft.; flows every 4 days; temporarily abandoned; total depth 4,454 ft.
BREWSTER COUNTY	
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE, Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	Drlg. 2,582 ft.
Van McPhail's No. 1 McIntyre, SE cor., Sec. 59, Blk. 352, 7 miles S of Alpine	Shut down 1,750 ft.
COKE COUNTY	
Reed, Hitchens et al's No. 1 Duncan, 1,980 ft. from S and 1,680 ft. from E of Sec. 239, Blk. 2, H.&T.C. Sur. (4,500-foot cable test)	Location.
CONCHO COUNTY	
Beesley et al's No. 1 S. Waring Est., 1,320 ft. from S and E of A. T. Robinson Sur., Abst. 2,120	Spudded and shut down.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor. G. Emmig Sur. 130, 6 miles W of Paint Rock	Shut down 1,520 ft.
CRANE COUNTY	
Continental Oil Co.'s No. 1-C Cowden Bros. & Co., 207 ft. from N and 2,470 ft. from W, Sec. 81, Blk. X, C.C.S.D.&R.G.N.G. Sur.	Drlg. 1,625 ft.
Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-27, Public School Land	Drlg. by tools; making estimated 7,000,000 ft. gas and spraying 25 bbls. oil per day; total depth 4,488 ft.
Cranfill Bros.' No. 1 Muir, 330 ft. from N and 2,310 ft. from W, Sec. 23, Blk. B-27, Public School Land	Fishing for tools.
CROCKETT COUNTY	
Dieringer et al's No. 1 Banscorew estate, 50 ft. from N and 1,213 ft. from E of NW of Sec. 27, Blk. HH, G.C.&S.F. Sur.	Drlg. 2,010 ft.
Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and shut down.
Magnolia Pet. Co.'s No. 2 Hoover, 2,310 ft. from S and 335 ft. from E of Sec. 2, Blk. FF, B.&B. Sur.	Swabbing and bailing 6 bbls. oil per day; total depth 2,056 ft.; shut down for storage.
Taylor-Link Oil Co.'s No. 1 Mary Bullock et al, 330 ft. from N and E of Sec. 41, T.C. Sur.	Shut down 2,300 ft.
CULBERSON COUNTY	
Cranfill Bros. and Sholts' No. 1 Seay, 2,310 ft. from S and W, Sec. 45, Blk. 60, Public School Land	Drlg. 125 ft.
Grisham & Hunter's No. 2 Garren, 2,475 ft. from S and 1,566 ft. from E, Sec. 20, Blk. 89, Public School Land	Shut down 1,520 ft.; show oil 1,400-15 ft.
Kornrumpf et al's No. 1 Garren, 330 ft. S and W, Sec. 15, Blk. 79, Public School Land	Shut down 1,180 ft.
DAWSON COUNTY	
Albaugh et al's No. 1 Robinson, C NW, Sec. 46, Blk. M, E.L.&R.R. Sur.	Spudded 20 ft. and shut down.
ECTOR COUNTY	
H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G. M. M.Br.&A. Sur.	Shut down 3,280 ft.
Skelly Oil Co. and Republic Prod. Co.'s No. 1 McKenzie, 990 ft. from S line and 330 ft. from E line of Sec. 28, Blk. 45, Twp. 2s, T.&P. Sur.	Shut down 3,750 ft.; flowed 110 bbls. on July 12; shut in for storage.
Southern Crude Oil Pur. Co.'s No. 2 Cowder & Co., 660 ft. from S and W of NE cor., Sec. 34, Blk. 43, Twp. 1n, T.P. Sur.	Drlg. 1,680 ft.
EL PASO COUNTY	
Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Sec. 46, J. M. Day Sur.	Shut down 3,089 ft.
Tri-State Oil Co.'s No. 1 Bobadella, 330 ft. from S and E of Sur. No. 254, S.F. No. 7,247	Moving in material.
FISHER COUNTY	
Condor Pet. Co.'s No. 1 Wilson, 330 ft. from N and 1,200 ft. from W, Sec. 6, W. E. Richardson Sur.	Drlg. 2,680 ft.
Cranfill & Reynolds' No. 2 Flannigan, 330 ft. from S and E of W half Sec. 200, B.B.B.&C. Sur.	Plugged back to 3,109 ft.; shut down for orders.

(Continued on Page 85)

WEST TEXAS COMPLETIONS

Ector County

Landreth Production Co.'s No. 5-T University, top pay 3,550 feet, shot with 300 quarts from 3,553-3,607 feet, initial production 229 bbls., total depth 3,612 feet.

Loving County

The California Oil Co.'s No. 5 Reagan and McElvain, top Delaware 4,276 feet, top sand 4,302 feet, total depth 4,316 feet, plugged back to 4,314 feet, shot with 160 quarts from 4,271-4,312 feet, initial production 313 bbls.

Midland County

Kerwin and others' No. 1 Mathena, dry and abandoned, total depth 4,215 feet.

Pecos County

Cardinal Oil Co.'s No. 3 J. H. Tippett, top pay 338 feet, initial production 30 bbls., total depth 400 feet. Cosby Production & Royalty Co.'s No. 1 Cordova Union Oil Corp. temporarily abandoned, total depth 3,015 feet.

Ward County

Alpine Oil & Development Co.'s No. 2 Boogher, top pay 2,145 feet, initial production 70 bbls., total depth 2,200 feet. Black & Massey's No. 1 E. R. Allen, top pay 2,143 feet, initial production 35 bbls., total depth 2,200 feet.

WEST TEXAS PRODUCTION

Week Ending January 3

County—	Wells	Bbls.
Andrews	3	90
Crane	371	24,905
Crockett	49	1,680
Ector	76	6,875
Fisher	8	1,378
Garza	1	36
Howard-Glasscock	533	17,761
Irion	7	90
Jones	73	1,356
Loving	35	3,040
Mitchell	149	2,060
Pecos	526	94,915
Reagan	253	21,555
Runnels	4	120
Scurry	5	8
Taylor	3	76
Upton	253	6,665
Ward	49	3,135
Winkler	593	54,410
Total production this week		240,155
Total production last week		245,994
Decrease		5,839

RUNS THROUGH TRUNK LINES

Company, size, location—	Bbls.
Atlantic, 10-inch, Houston	27,136
Gulf, 10-inch, Ranger	32,549
Humble, 2 and 8-inch, San Angelo	20,559
Humble, 10 and 12-inch, Ingleside	45,259
Illinois, 2 and 8-inch, Del Rio	36,468
Magnolia, 8-inch, De Leon	19,953
Pasotex, 8-inch, El Paso	9,231
Shell, 10-inch, Healdton	32,371
Shell, 10-inch, Houston	26,429
Texas, 12-inch, Houston	25,265
Total	275,220

RUNS TO WEST TEXAS REFINERIES

Amarillo Ref. Co., Pyote	none
Big Spring Ref. Co., Big Spring	910
Burford Ref. Co., Pecos	3,592
Blue Bonnet Ref. Co., Wickett	none
Cosden Ref. Co., Big Spring	none
Col-Tex Ref. Co., Colorado	7,000
Great Western Ref. Co., Big Spring	1,899
Humble Oil & Ref. Co., McCamey	none
Richardson Ref. Co., Big Spring	none
Tonkawa Ref. Co., Pyote	none
Wickett Ref. Co., Wickett	175
Total	13,577

TANK CAR SHIPMENTS

Big Lake from Texon	3,147
Fox and Thorsen from Mertzon	80
Thomas-Brann from Grant City	100
Reagan Co. Pur. Co. from Texon	none
Santa Fe from Hurdle	62
Southern Crude from Wickett	16,747
Total	20,136
Total daily average distribution	308,933
Total daily average production (including Lea County, New Mexico)	269,914
Daily average from storage	39,019

Pipe Line Construction News

ATLANTIC PIPE BUYS LIBERTY PIPE LINE CO.

HOUSTON, Tex., Jan. 5.—Atlantic Pipe Line Co. has purchased all the physical properties of the Liberty Pipe Line Co. in the Barbers Hill oil field, Chambers County, and at Texas City. The purchase also includes all of the marine equipment of the Liberty Pipe Line Co., consisting of towboats and oil barges. The purchase price was not made public, but it is understood to have been a substantial figure.

The physical properties of the Liberty Pipe Line Co. represented in the sale, contemplates the gathering system at Barbers Hill, the main 6-inch line from that field to the loading terminal at Cedar Bayou, the loading terminal in question, and the pump stations and tankage at Barbers Hill and the Cedar Bayou terminal. The tankage in question represents 180,000 bbls. capacity.

At Texas City the property represented in the sale is an ocean loading terminal fully equipped, including tankage with a total capacity of 500,000 bbls.

Liberty Pipe Line Co. will not be dissolved as a result of this sale, but, on the contrary, it continues as an organization; and will operate as a buyer, seller and handler of oil at other points. The company is a close corporation, the principal owners being Mills Bennett, its organizer and long identified with Barbers Hill, and W. C. Averill.

The history of Liberty Pipe Line Co. dates back to the early days of development in the Barbers Hill Field; it was the first pipe line in the field affording an outlet to the pioneer producers for production and so contributed much to the expansion of that area. It remains today the principal pipe line outlet from the field, handling at this time some 14,000 bbls. daily.

The sale of the physical properties of Liberty Pipe Line Co. does not affect the producing properties of Mills Bennett Production Co. at the Barbers Hill Field. Atlantic Oil Producing Co. has been purchasing Barbers Hill crude from Liberty Pipe Line Co. for a long while, and Atlantic's purchase of the Liberty line insures Mills Bennett Production Co. a steady market for its crude production.

CONTINENTAL MAY BUILD LINE TO MAVERICK AREA

CASPER, Wyo., Jan. 3.—At a hearing in Riverton on the proposition of connecting the North Western and Burlington railroads at Bonneville with a cut-off, and the construction of a spur or branch line to Pavillion in the Riverton reclamation project at some point between Shoshoni and Riverton, the Continental Oil Co., one of the largest producers in the Maverick Springs Field, was represented by its general counsel, Robert Hawley of Denver, and its division superintendent at Casper, Joe Dyer. Mr. Hawley said the company would agree to lay a pipe line from the field to Maverick Springs providing the railroad was built. He said the daily average oil shipments through the pipe line to the road would be approximately 2,500 bbls. The line would be 25 miles long and consist of 8-inch pipe.

John McFadyen, western manager for the Ohio Oil Co., and P. W. Hennessy, superintendent for Illinois Pipe Line Co.'s lines in Wyoming, were subpoenaed as expert witnesses by the State and testified about the general producing, transporting, refining and marketing conditions of the oil industry in general and in the Rocky Mountain states and Wyoming in particular. Another hearing will be held before the Interstate Commerce Commission in Washington January 27.

INLAND WATERWAYS PIPE LINE

FORT WORTH, Tex., Jan. 5.—The newly organized Inland Waterways Pipe Line Co. expects to be ready to transport oil through its new 4-inch line from the Frank Foster, Deep Rock Oil Co. and others' No. 1 Ashby in Rusk County by Wednesday, it was announced by F. Kirk Johnson, Fort Worth, one of the company organizers.

A 10-car loading rack on the I. & G. N. Railroad about 3 miles from the new well has been completed and pumping equipment is to be installed at once.

The loading rack of Inland Pipe Line Co. is located on the I. Robertson farm, a short distance northwest of the 10-car loading rack operated by Panola Pipe Line Corp., an H. L. Hunt interest.

NEW KETTLEMAN LINE 200 MILES OF 30-INCH

LOS ANGELES, Calif., Jan. 5.—Southern California Edison Co. and Southern California Gas Co., according to a current report, have formulated plans to construct the world's largest size natural gas pipe line from Kettleman Hills to Los Angeles, a distance of about 200 miles, at a cost estimated to run between $8,000,000 and $10,000,000. The line is expected to be 30 inches in diameter.

Final details, however, have not yet been worked out but a formal announcement of the joint venture will be made following an organization meeting to be held January 8.

Construction of the pipe line will be financed through the formation of a new company probably to be known as Southern Fuel Co. or some similar name. Both Southern California Edison Co. and Southern California Gas Co. will jointly own stock of the new company and no stock will be offered for public subscription.

The entry of Southern California Edison into the deal does not mean, it is explained, that the Edison company has any thought of going into the distribution of gas. Edison will utilize its entire portion of the gas to fuel its large steam generating plant at Long Beach. Joint construction of the line by the two companies, it is also pointed out, should not be construed as indicating that there is any financial tie-in between Southern California Edison Co. and Southern California Gas Co. or the latter's parent organization, Pacific Lighting Corp.

It is indicated that the primary purpose of the line is a measure of protection against dwindling natural gas resources of the Los Angeles Basin.

GULF LOOPS LINE FROM OKLAHOMA INTO TEXAS

The Gulf Pipe Line Co. has completed the construction work on 37 miles of looping on its third 8-inch pipe line from the Chambers station, 6 miles south of McAlester, in Pittsburg County, Oklahoma, to the 10-mile station near the Red River in Oklahoma. The company has under construction 16 miles of 8-inch line from the Saltillo station south of the Red River in Texas to complete the looping of third 8-inch line from the Red River to the Saltillo station.

The construction of these lines gives the company three 8-inch lines from the Chambers station in Oklahoma to the Saltillo station in Texas and allows oil to be pumped both north and south. The Gulf Pipe Line Co. is adding the new lines to its system in order to secure oil from Texas to supply the needs of the new refinery being constructed in Pittsburgh, and the expansion of the plant at Toledo, Ohio, which will be supplied through its new 10-inch line which starts from the Glenn Pool in Oklahoma.

PIPE AND TUBE MILLS BOOK MORE BUSINESS

By B. E. V. Luty

PITTSBURGH, Pa., Jan. 5.—Leading pipe and tube producers had the remarkable experience of booking considerably more business in December than in November, when regularly the trend has been in the opposite direction, in natural seasonal manner. The heavier bookings were in ordinary day to day business, no particularly large orders being entered. That point is important as one large order for line pipe or a couple of medium sized orders would swing the total of the industry and would not count as representing a trend.

As it is, the pipe mills feel greatly encouraged, with the view that this is the beginning of seasonal improvement, such as regularly occurs with the turn of the year. It may be that jobbers' stocks had previously been reduced so sharply that there was no room for further curtailment. There appears to have been on the whole a little increase in shipments from November to December, but there was a larger increase in bookings, whereby the producers entered January with a larger order book than a month previous.

As to line pipe there has been no buying thus far but there is a great deal of business under negotiation or in prospect. There are many piping projects, all of them more or less promising and subject more to questions of financing, perhaps, than any other points.

In the past few weeks mills have been asked to quote in many cases on large quantities of line pipe, but these inquiries are more or less tentative since frequently there are alternative projects, involving different sizes, etc., and prices are requisite for the engineers to choose between different plans. However, there are decided chances that some large line pipe business will be booked even in January, although the heaviest deliveries would hardly be required to begin at once. Having in mind the sold-up condition of line pipe producers for several months last summer, when they were in position to accept additional large orders only for deliveries as they could schedule them, buyers may wish to get in early this year. In 1930 there was practically no line pipe buying in January and February and not a great deal in March, whereupon there was a rush of orders.

KENTUCKY NATURAL GAS HAS BUILT 387 MILES

OWENSBORO, Ky., Jan. 5.—At a cost of approximately $3,500,000 the Kentucky Natural Gas Co., which is owned by the Missouri-Kansas Pipe Line Co., has built 387 miles of mains and gathering lines this year in 13 midwest Kentucky counties and two counties in southern Indiana. Through these lines the company is serving 17 cities and towns with natural gas in this territory.

The Missouri-Kansas company entered the Kentucky Field about two years ago and built a pipe line into Owensboro from the nearby gas field to the city limits of Owensboro, where it sells natural gas to the Owensboro Gas Co. for distribution. Since then the company has built mains and field lines in Hancock, Ohio, Webster, Hopkins, Christian, Todd, Logan, Barren, Metcalf, Warren, and Hart Counties and sections of Daviess County, Kentucky, and in Perry and Spencer Counties, Indiana.

With mains extending to them, distribution systems were built by the Indiana-Kentucky Natural Gas Co., also owned by the Missouri-Kansas company, in Cloverport, Hawesville, Whiteville, Utica, Hanson, Slaughter, Madisonville, Greenville, Franklin, Auburn, Oakland, Munsfordville, Ky., and Tell City, Troy and Cannelton, Ind.

REPORTED LINE TO LEWISTOWN

Reports from Lewistown, Mont., are to the effect that C. C. Robbins, chief engineer for Sabine Construction Co. of Pittsburgh, which backed the Capital Gas Co. test completed as a gasser on Arhmells structure, has arrived in Lewistown to lay plans for a pipe line which will bring gas to the city for domestic and industrial fuel consumption. The well has a flow of 8,000,000 to 10,000,000 cubic feet. The company is reported to have appropriated some $500,000 for the line which would be 25 to 30 miles long. A program of six or more wells is to be mapped out for spring drilling campaign.

BIG YEAR IN PIPE LINE BUSINESS IS FORESEEN

The A. O. Smith Corp. of Milwaukee announces that during 1930 it shipped 472,000 tons of electrically welded pipe to all parts of the United States, compared with 425,000 tons in 1929.

The 1930 tonnage, according to Carl C. Joys, Jr., manager of pipe sales, consisted of about 3,000 miles, of 24,272 carloads. The mileage was nearly the same as in 1929, and the carloads compared with 30,474 in 1929. More heavier pipe was made during the year just closed than in the previous year, the figures indicate.

In the first five months of the company's fiscal year, August 1, 1930, to January 1, 1931, shipments amounted to 216,000 tons, or 9,720 carloads, against 126,000 tons and 8,698 carloads the same 1929 period. Increases for the five months' period come to 71.4 per cent in tons, 11.7 per cent in loads, and 63.4 per cent in miles.

"The year 1931 ought to be a big year in the pipe line business, and I don't think it will be affected by stock market conditions," said Mr. Joys, "for this reason: The products are all sound economic enterprises, in the hands of large companies which won't have to do any public financing. The coming year ought to be the equal of 1930 or better."

The high pressure vessel business of the company is holding up fairly well, in view of conditions in the oil and other process industries where expansion is at a minimum for the time being, it was pointed out. The future, is was stated, will be determined solely by expansion of cracking in the refining industry and the developments in the chemical and other process industries.

Following are some of the company's larger pipe projects:

Company, size of pipe (inches)	Miles
Pure Oil, 10¾	200
Montana-Dakota Power, 12¾	300
Elec. Bond & Share, 14, 16, 18	350
Northern Gas, 16, 20, 24	600
Cities Service, 20	175
Pacific Gas & Elec., 16, 20, 22, 24, 26	550
Columbia Gas & Elec., 20	50
So. Calif. Gas, 20, 22	150
Miss. River Fuel (St. Louis line), 22	300
So. Natural Gas, 22, 18, 16	350
Continental Const. (Chicago line), 24	450

The A. O. Smith Corp. has a daily capacity of more than 30 miles of pipe. The question is sometimes asked, "How much pipe can be stored for immediate delivery?" The quantity is enormous and, according to Mr. Joys, no user need ever fear delay in having his order filled. For an example of storage facilities, if the space available were filled up completely with 10-inch pipe, enough would be stored there to build a pipe line from Kansas City to Chicago, a distance of 450 miles. This quantity of pipe, in 40-foot lengths, amounts to 952 carloads, or 19 trains of 50 cars each. The total tonnage would amount to 38,500 tons, or 77,000,000 pounds. The pipe storage consists of a mammoth craneway, having a span of 100 feet, and a travel of 595 feet, with the bottom of the crane rail 77 feet above the ground.

Three Gulf Producing Areas Extended

Pierce Junction, Hankamer in Liberty County and East Hackberry in Calcasieu Parish Have Good Wells

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Jan. 3.—Of six oil wells completed in Coastal fields the past few days, five marked or confirmed extensions in three producing areas. Pools affected were Pierce Junction, in Harris County; Hankamer, in Liberty County, while East Hackberry, in Calcasieu Parish, Louisiana, finished two good producers in the northern shallow sand extension in that field, an extension, the development of which has been watched with interest.

Apart from the pay completions, two failures are of more than passing interest.

In the shallow sand north extension of the Hackberry, in Calcasieu Parish, Calcasieu Oil Co. finished its No. 23 Watkins at a total depth of 2,844 feet for 1,270 bbls. of pipe line oil flowing through a one-half inch choke, gravity 23.2, temperature 68, pressure 225 pounds. The other completion was Yount-Lee Oil Co.'s No. 40 State-Kelso Bayou completed at a total depth of 2,908 feet with an initial production of 1,100 bbls. showing 1.2 per cent basic sediment and water, gravity 21.8, pressure 210 pounds, with the flow retarded by a one-half inch choke.

At Pierce Junction, in Harris County, the northwest flank of that field was extended by two pay completions as follows: Kipley Oil Co. finished a 750-bbl. well, pipe line oil, flowing through a five-sixteenths inch choke from a total depth of 3,857 feet. This is the company's No. 1 Prudential Investment Co. The oil tests 26.7 gravity with a working pressure of 360 pounds. The other pay completion on this northwest flank was Bob Smith's No. 4 Parsons, finished at 3,820 feet, flowing 350 bbls. of pipe line oil through a three-eighths inch choke, working pressure 250 pounds, gravity 26.1.

Interesting Test Is Dry

An interesting test was abandoned in Harris County during the week when Sloane Prospecting Co. quit its No. 1 Wasova in the Cedar Bayou district 4 miles west of Barber's Hill. The drill stopped in blue shale at 5,559 feet the hole a duster. This is the third test to be drilled in the Cedar Bayou district; and while the other two also were failures, one of them had such good oil showings interest in the district has been sustained. Another Harris County wildcat abandoned as a duster was W. C. Turnbow and others' No. 1 Miller, located 3 miles east of Deer Park, which finished in dry shale at 6,354 feet.

At Hankamer, Liberty County, Gulf Production Co. has scored a good well in its No. 10 Boyt, located 500 feet northeast of the nearest production. The well was finished at a total depth of 3,944 feet for 910 bbls. of net oil and 35 per cent basic sediment and water, production being retarded by a one-half inch choke, pressure 300 pounds. Gulf has made location for No. 11 Boyt 500 feet east of No. 10.

Pure Oil Co. finished a good well in its No. 12 Lost Lake, in the pool of that name, Chambers County. At a total depth of 2,393 feet the well came in for 480 bbls. of pipe line oil retarded by a seven-sixteenths inch choke on 2½-inch tubing, pressure 525 pounds, gravity 18°, temperature 80°.

In the Refugio Field, Refugio County, The Texas Company has a prospective oil producer in its No. 2 Ben Shelton, bottomed in the deeper sands at 6,612 feet. The well came in for an estimated 25,000,000 to 50,000,000 feet of wet gas with a pressure of 2,100 pounds on 2½-inch tubing and 1,000 pounds on casing, which indicates the major estimate of 50,000,000 feet of gas as being more in line than the lower estimate. The well was commencing to show oil as this was written.

In Austin County, at Raccoon Bend, H. R. Flannigan's No. 1 Dietrick, reported last week as setting on a gas sand topped at 971 feet, has been finished at 976 feet for 30,000,000 feet of dry gas, pressure 400 pounds. Location has been made for No. 2 Dietrick.

At Citrus Grove, in southwestern Matagorda County, Empire Gas & Fuel Co.'s deep wildcat has tested hot salt water. With the hole a total depth of 6,295 feet, where the drill stopped in sand and shale, 46 feet of 7-inch screen being set in the hole 14 feet off bottom for the test. This No. 1 Boker created much interest last November when it began blowing dry gas in considerable volume from a sand encountered at 6,248-52 feet. The blowout was killed and the drill sent deeper with the result noted.

Two other abandonments during the week in Costal fields were: Yount-Lee Oil Co.'s No. 143 McFaddin, at Spindletop, a dry hole at 6,654 feet, and Humble Oil & Refining Co.'s No. 1 Hylton, at Moss Bluff, a dry hole at 6,598 feet.

For the most part operations continued inactive over the holidays with many tests shut down although a number of these are scheduled to start up within the next few days. Work in the more active fields, such as Barbers Hill and Refugio was of a routine nature during the week although a number of tests now are nearing producing horizons. At Refugio, a half dozen deep tests were on sands and either testing or waiting casing cement to set before setting screen.

Daily average production of coastal fields continued steady with a decrease of 1,585 bbls. Production has been hovering around 180,000 bbls. daily for some time and present indications point to no early changes as fields are being held

(Continued on Page 88)

GULF COAST FIELDS AND WILDCATS

Week Ended January 3
All Rotary

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Prod. Co.'s No. 1-B Barber, north	Drlg. shale 3,749 ft.
Mills Bennett Prod. Co.'s No. 3 Gulf Fisher, south	Drlg. sand and lime 4,185 ft.
Mills Bennett Prod. Co.'s No. 1 Gulf-Smith	Drlg. sand and lime 2,661 ft.
Mills Bennett Prod. Co.'s No. 4 McKinney (workover)	Drlg. sandy shale 5,270 ft.
Humphreys Corp.'s No. 2-B Barber, north	Drlg. salt 2,397 ft.
Humphreys Corp.'s No. 1 Louise Fitzgerald, north	Drlg. shale and lime 4,580 ft.
Humphreys Corp.'s No. 10-A Kirby (workover)	Drlg. shale 3,914 ft.
Humphreys Corp.'s No. 1 Winfree, west	Swabbing 5,512 ft.
McAlbert Oil Co.'s No. 2-A Higgins, southeast	Drlg. sand and shale 4,902 ft.
Sun Oil Co.'s No. 7 Chambers, south	Drlg. sandy shale showing oil 4,553 ft.
Sun Oil Co.'s No. 1 Smith, west	Drlg. shale and lime 2,661 ft.
Sun Oil Co.'s No. 13 Wilburn fee, east	Waiting on orders.
The Texas Company's No. 1 Williams, southwest	Total depth 6,724 ft.; pulling liner.
The Texas Company's No. 1 Winfree, west	Oil sand 5,393 ft.; reaming to set casing.
Yount Lee Oil Co.'s No. 1 Hindman, southwest	Pulling liner 5,773 ft.
Yount Lee Oil Co.'s No. 17 Chambers, south	Drlg. sandy shale 3,708 ft.
Yount Lee Oil Co.'s No. 6 Phillips east	Waiting on orders.
Yount Lee Oil Co.'s No. 1 Winfree, west	Drlg. sandy shale 4,858 ft.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 4 Diemar	Location.
Humble & Valley's No. 3-B Hardy	Total depth 3,257 ft.; to pump.
Humble & Valley's No. 9 Mueller	Derrick.
Humble & Valley's No. 7 Payne	Derrick.
Humble & Valley's No. 8 Payne	Derrick.
Humble & Valley's No. 6 Saunders	Drlg. shale and sand 3,398 ft.
Humble & Valley's No. 3 Sherrod	Rigging up.
Humble & Valley's No. 4 Sherrod	Location.
Humble & Valley's No. 12 Thompson	Drlg. shale 2,750 ft.
Humble & Valley's No. 6 Woodley	Derrick.
Humble & Valley's No. 7 Woodley	Derrick.
Humble & Valley's No. 8 Woodley	Derrick.
Humble & Valley's No. 9 Woodley	Derrick.

HUMBLE—HARRIS COUNTY

John Deering's No. 1 Graff (workover)	Drlg. shale 5,242 ft.
P. S. Griffith's No. 1 fee	Drlg. hard shale and lime 5,395 ft.
LaRue, trustee's No. 1 Crane, northwest	Derrick.
M. LaRue's No. 1 Tuffly, northwest	Gumbo 1,405 ft.; shut down.
Southern Coastal Oil Co.'s No. 2 Perkins	Standing sand and shale 2,752 ft.
Sun Oil Co.'s No. 13 Bender (workover)	Standing 4,589 ft.
Sun Oil Co.'s No. 18 Bender	Drlg. shale 4,419 ft.
Sun Oil Co.'s No. 19 Bender	Drlg. hard sandy shale 3,209 ft.
Trapshooter Oil Co.'s No. 3 Rosenbaum	Shale 4,067 ft.; preparing to pump
Trapshooter Oil Co.'s No. 10 Neill, northwest	Drlg. rock 1,761 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 2 Manchester Corp.	Drlg. gumbo 2,567 ft.
Kipley Oil Co.'s No. 1 Prudential	Set 1 jt. of screen 3,857 ft.; comp. flowing 750 bbls. daily on 5/16-in. choke, pressure 360 lbs., 26.7 gravity.
Mike Kouri's No. 1 Jones fee, northwest	Shale and lime 4,020 ft.; fishing.
Smith et al's No. 4 Parsons	Set 30 ft. 4½-in. screen 3,820 ft.; comp. flowing 350 bbls. pipe line oil, ⅜-in. choke, pressure 250 lbs., 26.1 gravity.

BIG CREEK—FORT BEND COUNTY

Gulf Prod. Co.'s No. 61 Davis	Drlg. gumbo 395 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 5 Lost Lake	Total depth 5,847 ft.; cem. cavity.
Pure Oil Co.'s No. 12 Lost Lake	Total depth 2,838 ft.; plugged to 2,280 ft.; comp. flowing 480 bbls. pipe line oil.

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NEW POTENTIAL TEST IN PANHANDLE; SULLIVAN AREA NOT DANGEROUS

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Jan. 5.—Umpire Corcoran of the Panhandle district has ordered that tests for new potentials of that district shall start Thursday, January 8, and terminate January 20. The pipe line and purchasing companies were ordered to exceed allowable runs in providing room in lease storage tanks for the test and during the test period, but to cut back their runs subsequent to the test to bring the lease into balance is not to exceed five days thereafter. The tests will cover 48 hours, and only ordinary normal operating conditions will be allowed during the tests. Some exemptions will be granted certain wells on account of water. The amount of oil to be produced daily during the period from January 1 to 16 will be in accordance with the allowable production as set forth in proration schedule covering the period during December 16 to January 1, excepting the exemptions.

The Panhandle district continues to show a decrease in daily production, this week's daily average being down 2,435 bbls., from 56,475 bbls. to 54,040 bbls. per day. Five wells were completed in the district during the week, three being gas wells and two small oil producers.

Gray County, the heaviest producing county in the district, is still producing more oil than the allowable of the entire district, in spite of its daily average standing at a lower figure than in any week since May, 1929, but with activities cut to a minimum and no large flush producers being completed during the past few weeks, and with a gradual decline of the wells now on production, the average is bound to come down gradually. But few locations have been staked in the county for some time and it is apparent companies in that area are desirous of cutting production to the allowable and helping to pull out of the dire situation in which the Panhandle district finally found itself after building up production week by week until it had reached a peak that could not be taken care of by the pipe line outlets and purchasing companies.

Sullivan Area Small

The Taconian or Sullivan area, Gray County, which was brought in by Cree-Hoover and others on the Sullivan ranch some few weeks ago, and which looked like another flush production threat for the Panhandle district, has lost its threatening atmosphere since several wells have not come up to expectations, but have proved only small producers. The discovery well came in for around 9,000 bbls. initial flow, and but one other well, the Magnolia Petroleum Co.'s No. 1 Latham proved a good producer, making 1,800 bbls. on a 24-hour gauge. Four other offset wells are making only 105 bbls. per day, one making 6,000,000 feet of gas and failing as an oil producer. Several others are drilling, but the area is not seriously considered any longer.

Wichita Falls District

The holiday lull which has hung over the Wichita Falls district for the past 10 days has been lifted, and during the week the district marked off 27 completions, 15 dry and abandoned; 18 of the completions were reported for Young County. The best well of the week was King Royalty Co. and Bullington's No. S. Graham in the Newcastle area. Young County, completed for an initial production of 864 bbls. at a total depth of 710 feet after topping the shallow sand from 685-710 feet. The other producers were mainly small ones. A good many locations were staked, the majority being in Young County, which has been the most active during the past few months, due to new strikes opening up shallow pools, and the extension of these pools by outpost wells. The Newcastle area has been particularly busy, especially since the dis-

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East Central Texas Counties Get Play

Activity Stimulated by Discovery in Northern Rusk County. Gregg and Upshur Counties Also Share in the Interest

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Jan. 5.—Since the bringing in of Bateman's No. 1 Crim, wildcat discovery in the E. G. Sevier Survey, northern Rusk County, leasing and royalty buying activities have been gaining momentum although they had gained great headway soon after the core was taken showing saturated sand before casing was cemented, and the well drilled in later. The Dixie Oil Co., Sun Oil Co., Magnolia Petroleum Co., Warner-Quanlan, Ohio Oil Co., Shell Petroleum Corp. and Simms Oil Co. have been the main purchasers in the area, with many independent operators and smaller companies contracting for leases also. The majority of the buying is being done on a line running directly north from the well, although Gregg and Upshur Counties are being given a general play all over the two counties.

Mr. Bateman, owner of the discovery, gave out some revised figures on depth of his well after three different measurements had been made to check the various depths in question. Top of the sand was formerly given out as 3,638 feet, but this week's test showed it to be 3,629½ feet. This week's test also showed the casing to have been cemented at 3,624 feet instead of 3,636 feet as formerly reported, and the total depth is now set at 3,642 feet instead of 3,650 feet. A total of 12½ feet of sand was drilled in the well according to Mr. Bateman's late report.

May Sell Well

Mr. Bateman and associates have been considering selling the well and block of acreage consisting of 1,440 acres, and it is understood a deal has practically been closed although nothing definitely is known. A price of $1,500,000 has been reported but this cannot be substantiated at this time. Only two 1,000-bbl. tanks were erected before the well was brought in. Both were filled in about two hours, no others have been constructed and the well is standing shut in.

The location of this well was staked almost in the center of a block of approximately 1,500 acres which was acquired by P. S. Groginski, consulting geologist of Fort Worth, who worked the geology of the area and who turned the block to Mr. Bateman for a well and an interest in the block.

Many geologists now believe that production will be found at intermittent points along the old shore line of the salt basin, on the western flank of the Sabine uplift, interlacing lenticular Woodbine sand beds being responsible for such oil producing area which have not been seriously considered by the geological fraternity heretofore, the majority feeling that production would not be found so far east in the basin. The Joiner discovery changed the opinions of many, although others still believed it was but a freak discovery until Frank Foster, Deep Rock Oil Co. and others' No. 1 Ashby, nearly a mile west, came in for an estimated daily flow of 9,000 bbls. and definitely proved the pool as a major producing threat, and made the eastern tier of counties in the East Central Texas district look more favorable in regard to producing possibilities. There is no doubt as to its potentialities now, and leasing and royalty buying has been progressing at a feverish pace throughout the surrounding counties since this new well cored a saturated sand from 3,624 feet, and especially since it later came in as a big producer.

Picture of Bateman's discovery well on the Crim farm in northern Rusk County. J. N. Peterson, one of the fee owners in the Bateman block, stands facing the camera with his face wreathed in smiles for the farmers of East Central Texas are mighty glad to see their district benefited so greatly by discoveries such as this one. Mr. Bateman can be seen in the forepart of the picture on the move, dressed in field clothes as he is the majority of the time, not for effect, but for service.

Difficulties in Leasing

Major companies stayed out of the area except in a few cases, the Southern Crude Oil Purchasing Co., Pure Oil Co., The Texas Company, Humble Oil & Refining Co., Magnolia Petroleum Co. and Sun Oil Co. having purchased blocks of acreage in Rusk and adjoining counties, independent operators showing more activity throughout the county, purchasing what now looks to be especially valuable leases and royalties. The Joiner Pool did not even attract major companies, and as a result hardly any acreage is held by a major company in that pool. The companies have been slow to buy until the past few weeks, when leasing activities were commenced in a general widespread manner, and many geologists and land men have been kept busy studying the area and purchasing leases or obtaining options, which are exceptionally difficult to obtain in this part of Texas. Cold cash is generally demanded by the farmers for their leases, and it takes considerable bartering to pass a draft in payment for the acreage. And checks generally have to be certified or acknowledged by the local bankers before they are accepted for leases. The district offers its own eccentric difficulties to the purchaser of leases and royalties, but somehow or other contracts are signed and independent operators and companies acquire their respective acreage.

Regardless of the general overproduction the owners of this new discovery have had many wires, telephone calls and letters desiring to make contracts for the oil from the well and the area, most of them quoting prices below the market price. These wires and calls come mainly from Louisiana and Arkansas refineries which have been shut down, and they are extremely anxious to obtain crude from this part of Texas due to its close proximity and consequent short haul to their plants. The main line of the I.&N.G. (Missouri-Pacific) Railroad runs through the Bateman block approximately one-half mile from the well, putting the pro-

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WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending January 5

CARSON COUNTY

Company, well, farm name, section and block—	Remarks—
Empire G. & F. Co.'s No. 1 Jordan et al, C SE, Sec. 94, Blk. 4, I.&G.N. Sur.	Drlg. 2,160 ft.
Krebs & Barnard's No. 1 Barnard, 660 ft. S and W, NW, Sec. 24, Blk. 4, I.&G.N. Sur.	Drlg. 2,710 ft.
Plains Holding Co.'s No. 1 Kalka, C NE NE, Sec. 43, Blk. 4, I.&G.N. Sur.	Drlg. 1,540 ft.
Interstate Prod. Co.'s No. 1 McConnell, C SE SW, Sec. 65, Blk. 4, I.&G.N. Sur.	Drlg. 2,150 ft.
Magnolia Pet. Co.'s No. 1 Burnett, 330 ft. N and W, W½ NW, Sec. 101, Blk. 4, I.&G.N. Sur.	T.D. 3,040 ft; T.P. 2,988 ft; 1,500 ft. oil in hole.
North American O. & G. Co.'s No. 1 Polling, 1,320 ft. N, 1,500 ft. E, Sec. 24, Blk. Y-2, T.T.R.R. Sur.	Drlg. 1,300 ft.
Plains Holding Co.'s No. 1 M. P. Co. fee, C N½ NW SW, Sec. 40, Blk. 4, I.&G.N. Sur.	Rig on ground (rotary).
Ryan Cons. Oil Co.'s No. 1 Jordan-Brown, C N½ E½ NE, Sec. 83, Blk. 4, I.&G.N. Sur.	Drlg. 2,160 ft.

CHILDRESS COUNTY

C. L. Sloane et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur.	C.O. 525 ft.

COTTLE COUNTY

Darby Oil Co. and Merry Bros. & Perrini's No. 1 Richards, 330 ft. NE, Sec. 13, B.S.&F. Sur.	Cable tools; contract 5,000 ft.

GRAY COUNTY

Adams, Prince et al's No. 1 Morse, 330 ft. NE SE, Sec. 6, Blk. 26, H.&G.N. Sur.	Drlg. 2,060 ft; estimated 7,000,000 ft. gas 2,050 ft.
British-American Oil Co. and Shell Pet. Corp.'s No. 1 Smith, 330 ft. S and E, NW, Sec. 138, Blk. 3, I.&G.N. Sur.	Location.
Beck's No. 1 Sullivan, 330 ft. N and E, W½ NW, Sec. 135, Blk. 3, I.&G.N. Sur.	Estimated 30,000,000 ft. gas 2,520-2,650 ft; crooked hole; 2,920 ft; 5,000,000 ft. gas 2,845-50 ft.
Boyles et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur.	Spudded and S.D.

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EAST CENTRAL TEXAS WILDCATS

Week Ending January 5

DELTA COUNTY

Delta Development Co.'s No. 2 Hays Kinney, 300 ft. S of No. 1 Cooper, Townsite Sur.	Preparing to spud.
D. S. Hoods' No. 1 J. J. Balser, 185 ft. from S and 580 ft. W of Balser 40-ac. tract in SE cor. T. B. Laddin Sur.	Shut down 1,275 ft.
Worthington and Stedman's No. 1 W. H. Dejehett, 150 ft. from S and 776 ft. from W of 52-ac. tract, E. Chick Sur.	Shut down 962 ft.

FANNIN COUNTY

E. A. Parsons et al's No. 1 Morgan in the English Sur., 3 miles NE of Savoy	Will cement csg. 3,435 ft.
E. M. Rogers' No. 1 McSwain, 300 ft. S and E of Michael Daly Sur in Juan Telgado Sur., 1½ miles NE of Lomasco	Shut down 1,500 ft.

GREGG COUNTY

J. C. Ferrell's No. 1 J. K. Lathrop, 661 ft. from N and 1,194 ft. from W of 96-ac. tract, William Robinson Sur.	Drlg. 3,115 ft. in shale.
M. S. Hammond's No. 1 J. M. Hamby, 278 ft. from E line, 1,66' ft. S of Hamby 3,800-ac. tract, Martin Lant Sur	Shut down 2,588 ft.

HENDERSON COUNTY

M. E. Ashburn et al's No. 1 T. E. Barry, center of Barry 59-ac. tract in A. York Sur.	Shut down 3,993 ft.
E. L. Chapman's No. 3 Cade, 1,560 ft. from N and 750 ft. W. J. B. Dorsey Sur.	Top Pecan Gap 3,116 ft.; shut down 3,125 ft.
Texas State Oil Co.'s No. 1 Skinner, 150 ft. from E and 150 ft. from S. J. Henshaw Sur.	Shut down 4,516 ft.

HUNT COUNTY

Mamie S. Hammond's No. 1 W. H. Adams, center of survey, W of Branson Sur., J. A. McFarland Sur.	Derrick blew down.

LIMESTONE COUNTY

Ben Segall & Hundall's No. 1 A. E. Smith, 750 ft. from E and 300 ft. from S, M. N. Miller Sur.	Derrick.

LAMAR COUNTY

Everett & Allen's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur.	Shut down 664 ft.

NAVARRO COUNTY

Young et al's No. 1 Farmer, 700 ft. from S and 400 ft. from E of 110-ac. farm in Finley Sur.	Shut down 960 ft.

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Plan Deep Test in Jefferson County, Ohio

Thirty-nine Wells Completed During Week, 15 Oil Wells, 12 Gas Wells and 12 Dry Holes. Several Fair Gassers

By Staff Correspondent

PITTSBURGH, Pa., Jan. 3.—In southeast Ohio an interesting test was reported. It is drilling in the NW of Section 26, Island Creek Township, Jefferson County, and on the Wayne Coal Co. tract, and it is said that the operators, Benedum and Trees, have started this as a deep test which is to go to 6,000 feet or deeper. The Berea sand was drilled through at a depth of 1,500 feet, and there was no showing of oil or gas in that formation.

During the week, 39 wells were reported, of which 15 were oil wells, with an initial production of 98 bbls., 10 being in southeast Ohio, 12 gas wells, mostly in West Virginia, and the same number of dry holes. Several of the gassers were fair wells. Reviewing the operations of the past month, there were 34 fewer wells completed in all districts, with 36 fewer oil wells, but with an increase of 45 bbls. initial daily production over the preceding month. Except for several very fair gas wells, the month was uneventful, and at the present time the eastern fields remain very dull and with little, if any, signs of improvement.

SOUTHEAST OHIO

The largest well completed in southeast Ohio for the past week was a 500,000-foot gasser and was the test of the Ohio Fuel Supply Co. on the J. H. Miller farm in the SE cor. of the SW of Section 18, Brush Creek Township, Muskingum County. It was drilled in the Clinton sand at a depth of 3,980 feet.

Completions in other parts of Ohio were poor. In Ashland County, Harry Farmer and others completed a second well on the Nancy J. Stewart farm, Section 21, Lake Township, in the Berea sand at 730 feet, and it is showing for a 3-bbl. pumper. In Section 9 of the same township, the Great Lakes Oil Co. drilled No. 7 on the C. I. Sellers farm in the Berea sand and it was dry at 675 feet.

In Hocking County the Preston Oil Co. completed No. 1,453, and on the Sunday Creek Coal Co. tract in the NW of Section 11, Ward Township. It went to the Clinton at 3,457 feet and made only 1 bbl. the first day after shot. Another completion in Muskingum County was the test well of Kundtz and Hulse on the J. W. Mohler farm in the NW of Section 21, Blue Rock Township. It was drilled in the Clinton sand at 4,090 feet and had a slight showing of oil but was abandoned.

Five in Washington County

There were five completions in Washington County, one of which was a fair producer. Near the mouth of Danas Run, Section 34, Newport Township, Zwingle Brothers completed a test on the James Edwards farm in the Maxon sand at 978 feet and it made 25 bbls. the first day natural. H. F. McTaggart and others drilled their No. 1 on the Charles Fisher farm, Section 7, Palmer Township, in the Berea sand at 1,740 feet and it produced 2 bbls. the first day after shot. In the NW half of Section 7, Donald E. Williams and others completed their No. 4 on the Nena Hutchins farm in the 300-foot sand at 406 feet and it made about three-quarters of a barrel natural the first day. On Lot 1,101, Westry Township, F. M. Russell completed No. 32 and on the Alexander Martin farm. It was drilled in the Mahoning sand at 720 feet and was a dry hole. A similar result was had by the Thomas Oil Co. in its third well on the William Dewees farm, Lot 41, Salem Township. It reached the Buell Run sand at 312 feet with no showing.

Six in Medina County

In Medina County there were six wells completed, all in the shallow sand drilling. The largest was the Oko Oil & Gas Co.'s No. 35 on the Henry Essig farm, Section 13, Chatham Township, which was completed at a depth of 378 feet and made 25 bbls. the first day after shot. In the same section and on Lot 1, E. R. Edson & Son Co. completed No. 35 on the W. H. Ripley at 472 feet and it made 3 bbls. the first day after shot. The same company drilled No. 11 on the George W. Packard No. 1, on Lot 4, same section, to a depth of 500 feet and has a 2-bbl. well after shot. This company's No. 8 on the M. A. and Eva Franks farm, Lot 20, Section 16, Chatham Township, was a dry hole at 487 feet. The Oko Oil & Gas Co. also completed No. 35 on the Jessie McVicker farm, Lot 1, Section 2, same township, to a depth of 460 feet, and it is showing for a 2-bbl. pumper after shot. In Section 13, Chatham Township, C. B. Wood completed his No. 5 on the E. J. Hill farm at a depth of 425 feet and it is also a 2-bbl. pumper.

Drilling in Ohio

In Muskingum County the Preston Oil Co. has a rig standing on the John C. Hicks farm, Section 16, Perry Township, and in Washington Township Wilson Brothers have rigged up for a test on their own property. In Perry Township, the Wittmer Oil & Gas Properties have two wells, both tests, drilling, on the Sidney Taylor farm, Section 20, at 1,850 feet, and on the G. M. Heagan farm, Section 15, at 2,460 feet. In Monroe Township, James E. McLaughlin is down to 700 feet in his No. 7 on the Richard Boyce farm, Section 13.

In Wheeling Township, Guernsey County, James Sager and others are down to 1,000 feet in a second test on the James Sager farm, Section 19, and the Kemrow Co. has rigged up for a third well on the J. W. Fowler farm, Section 10. In Tuscarawas County, the Capital Drilling Co., Inc., has started a second test on the Stewart and Nancy Asher farm, Section 19, Washington Township, and is drilling at 250 feet. In the same township and Section 35, the Gordon Oil Co. No. 3 and others have rigged up for No. 4 on the Ralph Hullman farm. In Holmes County, the Ohio Fuel Gas Co. is drilling a test on the Clark Miller farm, Section 11, Washington Township and it is down to the 1,600-foot level.

Athens County

In Athens County, there are several tests drilling. Clark and others are down to 900 feet on the J. S. Radford farm, Lot 116, Athens Township. In York Township several wells are drilling. The Union Drilling & Producing Co., on the Charles Kontner farm, Section 23, is at 3,150 feet. The Gordon Oil Co.'s test, on the Frank Patton farm, Section 23, is to be drilled to the Clinton sand. The Hocking Valley Drilling & Producing Co. has rigged up on the Nelsonville Brewery property, Section 23. Close by, John Walters and others have spudded in and started drilling on the Nelsonville Foundry lot. There are two sands in this district, both gas, in the Berea and in the Clinton. The Wittmer Oil & Gas Properties has reached 2,600 feet in a second test on the Baird Brothers' land.

WEST VIRGINIA

There were five oil wells reported from West Virginia during the week and the most interesting was in Tyler County. The Union Gasoline & Oil Corp. drilled an old gas well on the J. O. and Anna Soles farm in Ellsworth district about 10 feet deeper in the Big Injun sand and while not yet completed, is producing about 8 bbls. a day. In Marion County, S. N. Elliot completed his No. 4 on the Arlie T. Hibbs farm, Mannington district, and it is showing for a 10-bbl. pumper at a depth of 3,295 feet.

In Ritchie County, R. B. Roberts completed his second well on the H. B. Perrine farm, on Dry Ridge, Grant district, and it is making 5 bbls. from the Big Injun sand after shot. In Murphy district, F. A. Deem and others drilled a test on the Mansfield Haught farm and it is showing for a 4-bbl. pumper. On Rock Camp Creek, the Federal Oil & Gas Co. completed No. 50 on the Roberts, Pell and Newman tract in Spencer district, in the Salt sand and it is showing for 5 bbls. natural.

Gas Wells

In Cabell County, the Hamilton Gas Co. completed a fair gas well in No. F-16 on the E. D. Hassie farm, Grant district. It was drilled in the Brown shale and is showing for 1,000,000 feet. In Gilmer County, the Middleton Natural Gas Co. completed a second test on the Perry Woofter farm in Troy district, in the Big Injun sand at a depth of 2,208 feet and it is a dry hole.

In Harrison County, the Reserve Gas Co. brought in a good gasser in its test on the Phillip Hilkey farm in Union district. It was drilled in the Speechley sand at 3,000 feet and is good for 1,000,000 feet. In Marshall County, the Manufacturers Light & Heat Co. completed No. 3,457 on the J. M. Rine and others' farm at 2,060 feet and has a gas well.

In Ritchie County, there were two dry holes in addition to the two wells reported. On Comb Run, the Warrior Oil Co. completed a second test on the Warder and Laningher farm, Grant district, in the Squaw sand and it was dry. On Hughes River, Murphy district, the West Virginia Utilities Co. had the same result in a second test on the Moore McNeil farm. It was completed at 1,980 feet and in the Injun sand.

There were four completions in Wetzel County. In Proctor district, Earl Hannon and others completed a second test on the Lavina Baxter farm in the Gordon sand and it will make a fair gas well. In the same district, the Midland Oil & Gas Co. completed a fair gasser on the Melvin Baxter farm at a depth of 2,372 feet. In Church district, the Pittsburgh & West Virginia Gas Co. completed No. 5,400 on the Aaron Furbee farm at 3,353 feet and it will make a gas well. In the same section, Hamilton and McNeely completed a test on the Lonnie Hunt farm at 3,246 feet for a gas well.

In Mingo County, the Red Jacket Oil & Gas Co. completed another good well in No. 15 on the Red Jacket Consolidated Coal & Coke Co. property in Harvey district. It was completed in the Big Lime at 1,323 feet and is showing for 1,500,000 feet. This property has been very productive.

Drilling in West Virginia

There are quite a few tests drilling and rigs for tests in Calhoun County. In Washington district, Wiseman and Jackson have a rig standing for a test on the Elizabeth J. Boothe farm, and George W. Hamilton and others have rigged up on the Ella Eisman farm. Godfrey L. Cabot has started his test on the G. B. May farm and is down to 375 feet, and in the same section, Doctor Hively and others have a rig standing on the William M. Hall heirs. In Sherman district, W. H. Bickel has reached 850 feet on the Louis Bennett farm, and L. P. Bickel has a rig standing on the Jack Bland farm. In the same district, C. B. Lewis and others spudded in and started drilling on the Calhoun County poor farm and had to shut down at 200 feet for lack of water. Godfrey L. Cabot has a second test drilling on the Lewis Little farm and it is at 640 feet. In the same section the Mid-Penn Oil Co. has a rig standing on the Chess Poling farm for a test. In Lee district, the Rocksdale Oil & Gas Co. is down to 2,115 feet on the Thomas Slider farm, and the Crummies Creek Fuel Co. is drilling at 1,175 feet on the H. L. Harless farm. The United Fuel Gas Co. has had to shut down at 300 feet on the Carr Shaffer farm until there is water. In Center district, Park Bowser is down to 1,600 feet on the Rebecca Wilson farm, and W. H. Bickel has had to shut down for water on the Jorn D. Collins farm and after reaching 1,680 feet. In the same district, B. J. Crawley has a rig standing on the Florence Pell farm, and A. H. Jackson one on the F. S. Means farm. F. F. McIntosh has rigged up on the Clinton Shock farm, Center district. In Sheridan district, W. S. Dailey and others are down to 1,100 feet on the J. J. Maze farm, and Godfrey L. Cabot has had to shut down for water on the W. J. Skinner farm and after reaching 2,020 feet.

In Roane County, Wiseman and Jackson spudded in and started drilling on the McQuain heirs farm in Smithfield district but after reaching 200 feet shut down for water. In the same district, the Central State Gas Co. is also down for water on the John Patton farm at 1,350 feet. The United Fuel Gas Co. has reached 4,435 feet in No. 1,645 on the Presly Vineyard farm. This well is an old completion drilled deeper. The same company is drilling No. 4,311 on the A. V. Adams farm, same district, at 1,575 feet, and has hauled in the material for No. 4,313 on the S. E. Boggess farm. In Curtis district, this company's deep test on the J. M. Hinxman farm is being cemented at 5,214 feet. In the same district, the Reedy Oil & Gas Co. has made a location on the A. J. Paugh farm, and the Parsons Oil & Gas Co. has a rig standing on the E. E. Rader farm.

In Jackson County, J. H. Starr and others have shut down their test on the J. H. Starr farm at 2,715 feet on account of boiler trouble and will soon resume. The well is in Grant district. In Washington district, the Pine Knot Oil Co. is skidding a rig for a test on the J. T. Phillips farm.

SOUTHWEST PENNSYLVANIA

There were no additional oil wells completed in southwest Pennsylvania during the past week, the total being six wells, evenly divided gas and dry holes. In Indiana Township, Allegheny County, M. C. and D. K. Rodgers completed a test on the Seibert farm in the 30-foot sand at 2,075 feet and it was a dry hole. In Buffalo Township, Butler County, close to the Allegheny County line, the T. W. Phillips Gas & Oil Co. drilled a test on the Stephen Varoff farm in the 100-foot sand at 1,800 feet and it is showing for a light gas well.

In Greene County, the Equitable Gas Co. completed a gas well on the N. A. Rumble farm in Dunkard Township. It was drilled to a depth of 2,405 feet. In the same township, the Union Gasoline & Oil Corp. completed a test on the A. J. Garlow farm at a depth of 2,918 feet and have a gasser.

In Washington County, the Manufacturers Light & Heat Co. completed No. 3,436 and on the L. A. Ames farm at 3,165 feet and in the Fifth sand it was a dry hole. This well is in North Bethel Township. In Hopewell Township, the Hopewell Oil & Gas Co. abandoned and plugged a test on the H. V. Caldwell farm when the 30-foot sand was unproductive. The well went to 875 feet.

In South Franklin Township, Washington County, the Carnegie Natural Gas Co. has reached 2,682 feet on the C. T. Dodd farm and will soon be in the sand. In the same township, J. Heidlemeir & Co. has started a second test on the George Bedillion farm.

Few Producers Reported in Central West

Lima Completions Either Dry or Gas. Some New Work in Central Ohio. Good Indiana Gasser. Kentucky Has Fair Gas Wells

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Jan. 5.—In the old Lima Field of northwestern Ohio there were a few completions but they were either dry or gas, as no new producing oil wells were reported from any of the counties. A number of old wells were abandoned. In Wood County, Liberty Township, the Ohio Oil Co. abandoned No. 17 Henry Fernside, Section 2, and No. 10 J. H. Mitchell, Section 2. In Plain Township, same company abandoned No. 26 Oliver C. Mitchell, and Nos. 7, 11 and 13 S. L. Mitchell, Section 35.

Hancock County also had a number of old wells abandoned by the Ohio Oil Co., Nos. 17, 19, 23, 26 and 50 P. Alexander, Section 36, Allen Township; No. 13 Maria Wolfe, Section 36; No. 5 J. B. Blair, Section 31; Nos. 3 and 12 J. W. Taylor, Section 25; Nos. 10 and 12 A. Fisher, same section; No. 8 Mary Decker, Section 26; No. 1 Dorney & Decker, same section, and No. 7 Jacob A. Frank, same section.

In Seneca County, Hopewell Township, Arthur Geiger's No. 1 J. E. Swartz, Section 25, is reported dry at 150 feet in the Trenton. In Scipo Township, the test of the Honey Creek Oil & Gas Co. on the G. H. Berton, Section 33, is showing for a light gas well at 2,375 feet.

In Hardin County, Pleasants Township, the Wiser Oil Co. has a light gas well on the Vera Jones, Section 5, Ohio Oil & Gas Co. has a fair gas producer in No. 1 O. E. & C. L. Curtis farm, Section 1, Cessna Township, same county. Egan & White are starting a second test on the Oscar Steiner, Section 12, same township. In Pleasants Township, Lime Pipe & Supply Co. is drilling No. 3 Newton Martin, Section 7, and Barnaby and others are drilling No. 8 Jacob Kurt, Section 6.

Murphy and others are starting a test on the F. E. Chamberlain farm, Section 5, Tymochtee Township, Wyandot County, and Jones & Coyle are drilling No. 1 Jessie Chilcote farm, Section 17.

Two wells are being drilled in the western part of Lucas County that are being watched with much interest. One is R. B. Weed and others' No. 1 Emmett Holloway farm, NW, Section 29, Springfield Township, and the other is by the Interior Oil Co., of Ohio, on the E. and J. Keil, SW, Section 28, Monclova Township. These tests are only a few miles northwest of Maumee, and practically west of Toledo. A large acreage has been leased in that vicinity by Columbus and other parties and advice is that they will drill a number of tests during the spring and summer if commercial oil shows up in the two tests. Monclova Township already has a couple of fair producers, but nothing large.

CENTRAL OHIO

In the central Ohio Field there were 14 completions reported, 6 producers with an initial of 384 bbls.; 4 dry holes and 6 gas wells. New work starting shows 5 new rigs and 11 wells spudding, a total of 16.

In Ashland County, Lake Township, Robinson and others' No. 6 Henry C. Young farm, Section 22, is a small gas well, along with an initial oil production of 16 bbls. from 572-647 feet. Same parties are starting No. 3 Barbara Easley, Section 9, while their No. 7 C. I. Sellers, same section, was a dry hole from 666-78 feet, where broken sand formations were encountered. In Perry Township, D'Lano and others' No. 3 D. E. and E. A. Jacobs farm, Section 29, is reported a light gas well from 666-75 feet.

In Medina County, Chatham Township, the Oko Oil & Gas Co.'s No. 46 Henry Essig farm, Lot 3, is an exceptional producer for that area, with an initial of 60 bbls. from 315-79 feet. Edson and others' No. 37 W. and R. Ripley farm. Lot 1, pumped but 1 bbl. from 400-70 feet.

In Lorain County, Ridgeville Township, the Stoney Ridge Oil & Gas Co. is drilling a second test on the Mathias Myers farm, Lot 42.

In Wayne County, Hulse & Kundtz found no sand at a total depth of 3,219 feet in No. 2 on the Edward Landis farm, Section 19, Chester Township, which goes as a dry hole, while No. 3 is starting.

In Holmes County, Munroe Township, the Lydic Oil & Gas Co.'s No. 6 Charles Shank farm, Lot 10, failed to get a pay, as the sand was broken and is dry from 855-61 feet. The Kemrow Co. is drilling No. 4 Charles Barnes, Section 5, same township.

Knox County

In Knox County, Jackson Township, the Preston Oil Co.'s No. 2-1,458 W. S. Beatty farm, Section 2, is a fair producer of gas and showed 7 bbls. of oil initial from 3,053-3,103 feet.

In Summitt County, Franklin Township, Lyons and others' No. 1 Seubert-McKnight farm, Section 25, showed for a light gas well from 4,103-38 feet.

In Licking County, Everett Gas Co.'s No. 4 Felix Claypool farm, Section 7, Hanover Township, is an exceptionally fine producer, reported at 135 bbls. initial from 2,797-2,847 feet. Emerald Petroleum Co. is starting No. 2 Sidney Tarlton farm, Section 8, Fallsburg Township.

In Muskingum County, Wayne Township, the Atha Co.'s test on the Julia Dietenbach farm, Sections 9-12, is a fair gas well from 4,030-42 feet. The Pure Oil Co. made a nice strike in No. 2 Frank McKee farm, Section 6, Jackson Township, when the well was shot from 2,970-3,021 feet, the initial production being 172 bbls. Hopewell Oil & Gas Co. is drilling No. 1 John C. Sidle, Section 6, Hopewell Township. Ohio Fuel Gas Co. got a gas well in No. 1-5,354 J. K. and E. Miller farm, Sections 17-18. In this well the pay was found from 3,933-78 feet.

In Athens County, Cannan Township, Nuzum and others found a dry hole in the Berea sand at 1,418 feet in No. 2 Elmer Halbert, Section 8. Mosure and others are drilling No. 10 Lena L. Bean farm, Section 18, Rome Township, same county. In York Township, J. J. Walters and others are drilling No. 21 on the National Fireproofing Co.'s land, Section 12, and are starting No. 1 A. L. Jones farm, Section 5.

In Stark County, Jackson Township, Kime and others' No. 1 John Firestone farm, Section 35, is a fair gas well in the Clinton from 4,429-62 feet. Penn Oil & Gas Co. is drilling No. 1 William H. Dailey, Section 6. East Ohio Gas Co. has a light gas well in No. 1 J. M. Blake, Section 2, Perry Township, from 4,347-73 feet.

INDIANA

The most interesting development in Indiana was the bringing in of a gas well with an initial of 3,000,000 feet by the Gardner Petroleum Co. on the Mary E. Bond farm, Section 15, Busseron Township, Knox County, north of the town of Decker. This well is far from former production of either oil and gas and opens up something new for the scouts to work on. The well is in the north part of Knox County, and has a rock pressure of 322 pounds.

In the older Indiana producing area in Jay County, Virgil V. Ford has abandoned No. 1 J. Parks farm and Nos. 1 and 2 on the R. D. Wheat farm, all in Section 12, Madison Township.

Clara E. Kinsey has abandoned her Nos. 1, 2, 3, 4, 5, 6 and 7 D. W. Bonifield farm, Section 19, Salamonie Township, Huntington County.

The Ohio Oil Co. is starting a second test on the Mable Prevo farm along the east line of the farm, NW, Section 32. Prairie Creek Township, Vigo County.

The Texana Oil Co. is drilling No. 1 S. McCullough farm, Section 10, Barton Township, Gibson County, and is still working at No. 1 on the L. W. Gudgell farm, Section 25, Columbia Township, same county.

Charles C. Taliaferro, Jr., is starting No. 1 Sarah Stansel farm, Section 23. Washington Township, Pike County.

Thomas & Ellis are drilling on the W. F. Collins farm, Section 31, Prairie Creek Township, Vigo County. Shell Petroleum Corp. is drilling No. 1 Robert A. Bond, in Busseron Township, and the Dome Gas Co. is drilling No. 1 Alva Martz farm, Section 29, Curry Township, Sullivan County.

W. C. McBride, Inc., is drilling on the Mary Mellen farm, Section 35, Hart Township, Warrick County.

ILLINOIS

Little is doing in any part of the Illinois fields, the best of the late completions being a second test drilled on the John Magill farm, Section 3, Montgomery Township, Crawford County, by William C. McBride, Inc., which showed an initial production of 12 bbls.

In Lawrence County, Lawrence Township, the Ohio Oil Co. abandoned No. 5 Clay Seed farm, Section 16.

Highland Oil & Gas Co. brought in a duster at a second test on the M. Loeffler farm, Section 25, Wabash Township, Wabash County. No. 1 on this same farm was a nice producer when brought in a few weeks ago.

The Dupo Field has another dry hole, drilled by Riehl and others on the T. Kean, Lot 28, Sugar Loaf Township, St. Clair County, along the west border of the State. In the same county, near East Carbondalet, Ellis and Thomas abandoned No. 1 H. Onstett, No. 1 Hamel and No. 1 J. E. Yoch lots, and the St. Clair Oil Co. abandoned No. 1 J. W. Hamilton, Lot 28, same township. Hans Wolf is drilling No. 3 Oliver Anderline, Lot 33, same township, and Kroeger and others are drilling No. 1 Fred Metter property.

In Madison County, Painter, Goethe and others' No. 1 F. E. Culy, Section 35, Fosterburg, was dry, and the same firm's No. 1 F. C. Klinke, Section 4, was also a duster. Sam Reyburn abandoned No. 1 Ferdinad Keller, Lot 7.

KENTUCKY

Very few completions were reported in any area of Kentucky for the week, owing to the recent holidays. While the Legrande Field in Hart County is now the leader in development work, no completions were forthcoming and the shut down in the Owensboro Field, the second largest in the State, is still being carried along, now more than a year. In the Scottsville-Bowling Green Fields it is reported no oil is being taken by the pipe lines on account of lack of storage for the crude.

In the Greenville area of Muhlenberg County, a gas well is reported on the Henry Johnson farm, and another, No. 3, on the John Cosby farm, both exceptionally fine producers.

Unknown parties drilled a dry hole on the D. S. White farm at the outer edge of the Legrande Field, west of the pool.

Mel Root and others' test on the C. E. Hicks farm, near the hamlet of Lino, developed into a dry hole and was abandoned.

Late advice from eastern Kentucky is that the Petroleum Exploration Co. brought in fair gas wells in No. 1 General Spurlock farm, and No. 1 Nancy Jane Craft farm, in Clay County. Same company drilled two dry holes in Leslie County, in No. 1 Begley Coal Co. land and No. 1 Lucy A. Nield farm.

GOOD COMMERCIAL COMPLETION IN CENTRAL TURNER VALLEY

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Jan. 3.—In the Central Turner Valley area, McLeod Oil Co.'s No. 5, LSD 15, Section 1-20-3w5, encountered a commercial wet gas flow 234 feet in the lime at 5,188 feet. The initial flow measured 9,800,000 feet, increasing to 13,000,000 feet. As it stands it is a good commercial well. McLeod's Nos. 2 and 4, LSD 16, are producers, the latter from a lower horizon of the lime while Nos. 1 and 3 are standing in the lime, pending completion of No. 5, when efforts will be made to restore production.

Okalta Oils' No. 2, LSD 8, same section, is reported on production test, after drilling to below 5,095 feet, a lime depth of around 350 feet. The flow is around 12,500,000 feet but the naphtha content is not heavy.

In Section 12-20-3w5, Widney Petroleums' No. 1, LSD 11, got the deep lime at 5,015 feet and is reported cementing 8-inch casing around 5,030 feet. The hole has about 2,100 feet of light crude drained from the Dalhousie sand while drilling; before deepening from the lime a good production was taken for some months from the McDougall-Segur sand.

Dome Oils' No. 2, LSD 16, Section 36-19-3w5, is drilling at 4,370 feet after penetrating the Kootenay coal seam, and is expected to get the Home sand around 4,600 feet. The test is interesting owing to its westerly structural position, being west of Royalite's No. 23 producer and southwest of the Okalta wells. Production in this area would mean a considerable extension to the southwest of the Central Turner Valley Field.

In North Turner Valley, United Oils' No. 4, LSD 2, Section 24-20-3w5, is the only test reported active. It is redrilling below 4,720 feet and making fair headway. The location is north and east of the Spooner producers, and considerably east of Model Oils' No. 1, which is one of the best producing wells in the north end. Farther north, tentative arrangements have been made for resumption of Freehold Oil Corp.'s No. 1, SW Section 3-21-3w5, before May 1, 1931.

In the South Turner Valley, Imperial Oil, Ltd. has started work on Merland Oil Co.'s No. 1, Section 27-18-2w5, which is reported fishing at around 4,820 feet. Tentative arrangements have been made for completion of the Merland test by Imperial Oil, Ltd. conditional on this being found feasible. Merland's No. 1, which is the farthest south test in the Turner Valley Field, got a strong flow

(Continued on Page 99)

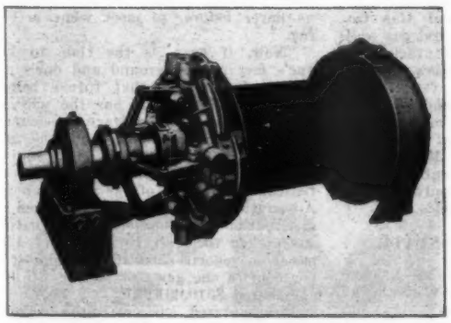
BESSEMER

REVERSIBLE SPEED REDUCER

HUNDREDS of production men were attracted to this new unit at the Tulsa Exposition last October. None of them had ever seen or shifted a reverse clutch so smooth, so quiet, so positive as this. This unit is sufficiently strong and durable to withstand the punishment of band wheel or rig front work on deep wells.

With the Reversible Speed Reducer, you don't have to use 14 inch, 16 inch or 18 inch clutch pulleys to reach the right pumping speed. Nor does the pulley size restrict your engines to a speed of 180 r.p.m. if they can turn over faster. You get the desired band wheel speed for any rated engine speed from 180 to 300 r. p. m., and the desired pulling or swabbing speeds for any maximum engine speed from 350 to 600 r.p.m. Reverse is faster than forward in any ratio you want up to 2 to 1.

Main shaft and pulley shaft roll on Timkin bearings. Roller chains have an unusually high factor of safety. Three removable covers make the interior very accessible. Let our representative point out the engineering and operating features of Type—GRF.



THE NEW TYPE—GRA REVERSE CLUTCH

Rated 50 B.H.P. at 180 R.P.M.
Reverse speed ratio of 2 to 1.
Pulley wide enough for 22" belt.
5-inch heat treated steel shaft.
Babbit or roller outboard bearings.
Zerk-lubricated bronze bushings and bronze bearings in reverse drum.
Reverse gear pinions on Hyatt bearings.

THE COOPER-BESSEMER CORPORATION, • Mt. Vernon, Ohio, • Grove City, Pa.

Natural Gas Industry Developments

REPORTS OF HELIUM ABROAD UNCONFIRMED

No other country possesses helium-bearing gases which would form a basis for helium production at all comparable with that of the United States, Scott Turner, director of the Bureau of Mines of the Department of Commerce, has just informed Senator Fletcher (Dem.), of Florida, by letter.

Reports of the discovery of helium in Japan, Esthonia and Belgian Congo are yet unconfirmed, Mr. Turner wrote.

Mr. Turner's letter was in reply to a letter from Senator Fletcher, in which the senator explained that an editor of a Florida newspaper had been criticized for stating editorially that helium, being a natural resource peculiar to the United States, gave this country an advantage in developing "lighter-than-air craft."

Helium, however, is available all over the earth, in as much as there is one part of helium to every 185,000 parts of air, but the extraction of helium from the air, under present conditions, would be too expensive for regular use, Mr. Turner pointed out in his letter.

Mr. Turner's reply to Senator Fletcher follows:

Developed resources of helium on a scale large enough for purposes such as aeronautics are peculiar to the United States, but the mere occurrence of helium is not. The United States Goverment now has a plant which has produced as much as 1,400,000 feet of helium in a month and is capable of producing 2,000,000 feet per month, whereas production of helium in other countries has been on a comparatively restricted scale by reason of dearth of helium-bearing gas; and the total quantity produced would be insignificant so far as use in filling dirigibles is concerned.

Helium is contained in atmospheric air in the proportion of about one part of helium to 185,000 parts of air, so if costs of extraction are not considered, it is available all over the earth. However, under present conditions, helium extracted from air would be far too expensive for use in dirigibles.

Helium has been found in other countries in gases from mineral springs and volcanoes, and has also been isolated from certain minerals, but these sources would not be practicable as a basis for extraction of helium for use in lighter-than-air craft. Reports have come to us from time to time of discoveries of helium in natural gas in other countries, but so far as we are aware, none of the resources of helium-bearing gas so far discovered in other countries are comparable to those in the United States. There are some helium-bearing gases in Canada, but, although experiments looking to the production of helium from natural gas have been carried on, the Canadian work has never gone beyond the experimental state, whereas ours has developed into large-scale production.

The fact that Canada has not developed production is, I believe, due largely to the fact that their helium-bearing gases are too low in helium content or of too small volume to give a real basis for production. We have heard reports of discoveries of helium in Japan and other countries, and within the past two weeks we have received reports of discoveries in Esthonia and the Belgian Congo, as yet unconfirmed. However, satisfactory production of helium on a scale and at a cost necessary for operation of dirigibles requires a large volume of gas and other conditions, as well as sufficient helium content in the gas.

The information here, so far available, does not indicate that any of the helium-bearing gases so far discovered in foreign countries would form a basis for helium production at all comparable with ours.

WEST TEXAS COUNTIES TO USE REAGAN GAS

SAN ANGELO, Tex., Jan. 5.—Contracts for the purchase of gas from the world's deepest producers, in Reagan County, by the Oklahoma Natural Gas Corp. from the Big Lake Oil Co. and Group No. 1 Oil Corp. (Texon), a subsidiary of the Continental Oil Co., have been signed. The announcement added that engineers will begin the work preceding actual laying of a 12-inch line to San Angelo and an 8-inch line to Rio Pecos, both from Reagan County.

Much of the total daily potential gas production of approximately 165,000,000 feet by the seven deep wells, ranging from 8,489 to 8,923 feet, will be available for domestic, industrial and commercial uses.

The Oklahoma Natural's contracts are for 10 years and marketing of the gas will increase the revenues of both the producing companies and will swell the royalty fund of the University of Texas, which now approximates $14,000,000.

Employment to a number of men will be provided for about three months in laying the two lines, at a cost of between $2,000,000 and $3,000,000. San Angelo will obtain an abundance of fuel, while the line to Rio Pecos will supply the plant of the Pecos Valley Power & Light Co., from which transmission lines radiate to the oil fields in Reagan, Upton, Pecos and Crane Counties.

NATURAL GAS PROPERTIES

LOS ANGELES, Calif., Jan. 3.—Natural Gas Properties, Inc., a subsidiary of Pacific Public Service Co., and a holding company for Natural Gas Corps. of California, Oregon and Washington, and less than a year old, already has invested almost $3,000,000 in gas plants and distribution systems.

The company has installed or has under construction plants in 21 communities in the three Pacific Coast states, 11 in California by Natural Gas Corp. of California, five in Oregon by Natural Gas Corp. of Oregon, and five in Washington by Natural Gas Corp. of Washington.

R. E. Aitcheson, executive vice president of Natural Gas Properties, says: "It is the plan of this company and its subsidiaries to continue this program of expansion and development in 1931, and franchises for new territories are being obtained continually."

Indicative of the sincerity of this statement is the recent approval of the California Railroad Commission, for Natural Gas Corp. of California to serve liquefied natural gas to 19 other California communities. Included are Suisun, Fairfield, Vacaville, Corning, Williams, Dunsmuir, Yreka and Arbuckle. Applications to serve natural gas to Barstow and Victorville, Calif., were dismissed by the commission at the request of the company.

CHESTER, WYOMING, FRANCHISE

CASPER, Wyo., Jan. 3.—Two petitions are before the city council of Chester, Liberty County, asking for a franchise to serve that city with natural gas and the council has taken an odd manner of settling the choice between the two companies. The matter is being laid on the table until the A. H. Perkins Gas Co. has time to drill a well on some holdings near Chester where gas is expected at shallow depths. The other applicant, the Northwest States Utilities Co., would have to lay a pipe line from some wells the company has near Whitlash. In case the Perkins company finds production it will only have to lay a line about 3 miles long. The hearing on the franchises will be held February 15.

NEW GAS FRANCHISES IN CANADIAN CITIES

CHATHAM, Ontario, Jan. 3.—By-laws granting 30-year natural and artificial gas franchises to the United Suburban Gas Co. of Hamilton were submitted at the recent municipal elections at Brampton, Port Credit and Toronto Township. The by-law carried in Brampton and Port Credit but was defeated in Toronto Township.

The Dominion Natural Gas Co. is laying mains to supply gas to the town of Preston, Ontario, for which it recently secured a franchise. It is expected gas will be delivered early in January.

Representatives of the city of Regina, Saskatchewan, recently visited the cities of Calgary and Edmonton to investigate the natural gas franchises and systems in operation in the Alberta cities.

The Calgary, Alberta, city council recently passed a resolution urging the adoption by Alberta of a policy of conserving gas reserves for the use of the communities of the province.

GIANT NATURAL GAS BURNER

A burner which consumes 50,000 feet of natural gas per hour, and which has resulted in a saving of 40 per cent compared with the cost of coal, was installed recently in a sugar refinery at Johnstown, Colo. The burner, one of the largest in the world, is employed in maintaining a calcining tube kiln at a temperature of 2,750° F., says the article. It is 14 feet long.

SHELBY RATES IN COURT

CASPER, Wyo., Jan. 3.—The fight over rates for natural gas between the Citizens Gas Co. and the Great Northern Utilities Co. is up again, this time in the Federal Court at Helena. It will be recalled that the Great Northern Utilities Co. was serving Shelby with natural gas, the Citizens Gas Co. laid a line from some wells in the Sunburst Field and cut the existing rate. The Great Northern followed with a similar cut and after several competitive reductions the Great Northern cut the rate still further to 20 cents and the Citizens Gas Co. went into court to have the Great Northern raise its rate. The Montana Public Service Commission ruled that the Great Northern should raise its rate, but the company appealed to the Federal Court for an injunction restraining the commission from enforcing this ruling and this case is now coming before the Federal Court at Helena.

APPALACHIAN GAS

The Appalachian Gas Corp. announces that its subsidiaries and affiliates, exclusive of Memphis Natural Gas Co., owned or controlled 617 natural gas wells in West Virginia, Ohio, Kentucky and Texas. The greatest number 168, is owned by Allegheny Gas Corp., with Ohio Valley Gas Corp. second with 158 wells. Estimated gas reserves are 151,818,547,000 feet, exclusive of Texas Gas Utilities Co. and Memphis Natural Gas Co. The latter company secures its supply of gas under long-term purchase contract from the Louisiana fields.

LEASING IN 'YORK STATE

BRADFORD, Pa., Jan. 3.—A company, represented by C. F. Corbett and A. J. Foster of this city, has nearly completed leasing about 1,000 acres of land located in the south part of the township of West Union, near the Rosa schoolhouse in Rexfille, Steuben County, New York. The company plans to start drilling in the near future to a depth of 4,000 feet in search of gas. The Bradford company paid $1 an acre for the leases.

GAS INDUSTRY LEADERS CONFIDENT OF FUTURE

Leaders of the gas industry in the United States and Canada see indications that their business will continue its march of progress in 1931. They look for no abatement in output and sales in view of the fact that the 1930 record almost equalled that of 1929 despite the general business uncertainty of the year just closed.

"Gas is used in this country by approximately 16,000,000 customers," declared Clifford E. Paige, of New York, president of the American Gas Association. "During 1930," he continued, "the aggregate volume sold was nearly 2,500,000,000,000 feet. Revenues from the sale of gas in the first 10 months of 1930 are practically the same as for the corresponding period of 1929, although the output of gas shows some reduction.

"Most of the gas companies in the country have maintained their schedules of construction, and at President Hoover's request, have, as far as possible, anticipated them. The result is that public utilities and the gas industry particularly have been able to employ even more people than was the case last year, thus making a substantial contribution to the stabilization of the business.

"During the year, the territory served by the gas industry has extended materially. Moreover, the useful purposes for which gas may be adapted for fuel have increased considerably.

"The increased activity in research at the Cleveland laboratory of the American Gas Association and the valuable coöperation of various technical schools with which the industry is affiliated, assure a continually expanding field for this product."

Alexander Forward, managing director of the American Gas Association, believes that gas will play a big part in 1931 readjustments. "Although the gas industry has suffered less than almost any other business in America from uncertainties and readjustments in 1930," Mr. Forward said, "we shall have full part in the reconstruction of 1931.

"We can take not more than a moment to be gratified that the gas industry in the past year equalled its business record of 1929," he added, "although that fact has deep significance. Indeed it is now all the more important that we, our resources of knowledge and equipment and spirit unimpaired and our essentiality fully demonstrated, shall have our full part in the inevitable general recovery just ahead and in the solution of new problems. There are readjustments ahead, and, as always, the gas industry's strength is in the ability to readjust. The lessons of the year have not been missed; the association has been thinking ahead; we are organized, as never before, to meet what is coming.

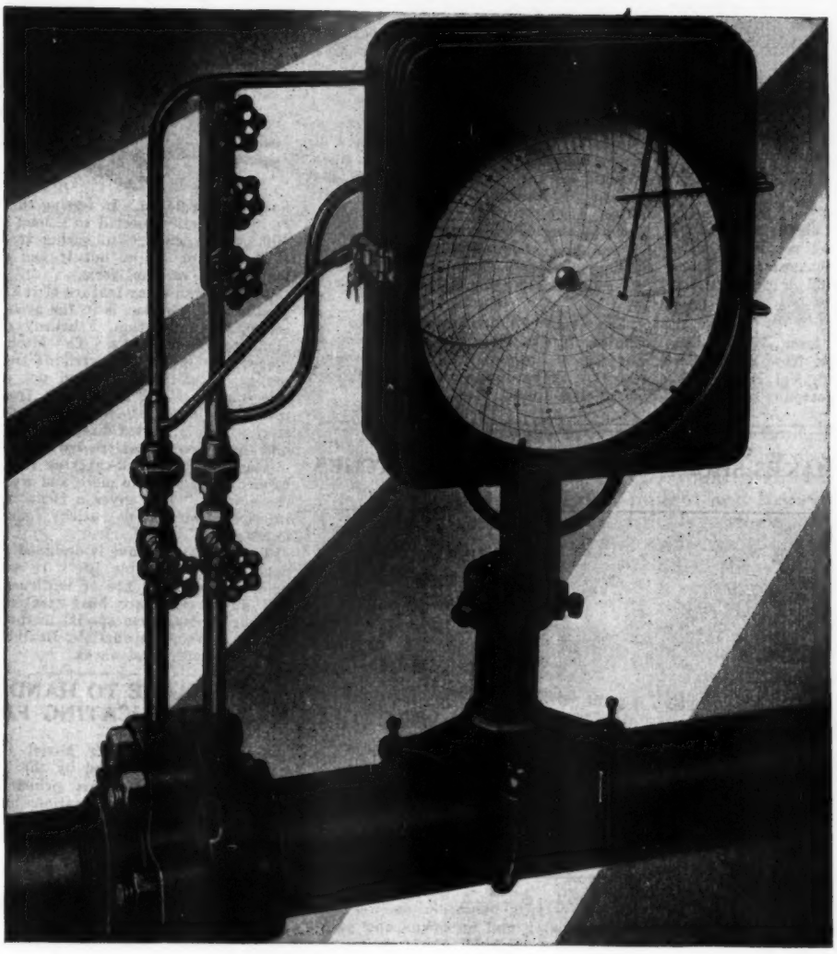
"Now, if ever, is the time to keep one's feet on the ground and one's eyes to the future, for that future belongs to the individual who has the will and the ability and the courage to correctly appraise the terrain around the next corner."

Actual figures compiled by the statistical department of the American Gas Association show that revenues from the distribution of manufactured and natural gas during the first 10 months of 1930, based on reports submitted by almost 90 per cent of the gas distributing utilities, aggregated $519,691,351.

Manufactured gas companies reported revenues of $314,548,799 for the 10-month period, representing a slight gain over the $313,416,157 reported by the same concerns for the corresponding period of 1929. Revenue of natural gas companies for the same period amounted to $205,142,552, a decline of 1.5 per cent from the same months of 1929.

DIFFERENT

The EMCO ORIFICE METER



EMCO

EMCO Orifice Meter

Simple, rugged construction.

Easy to clean and service.

Convertible between 20"—50"—100" ranges.

Simply change mercury chamber.

Dial differential calibrating and adjusting device.

Makes hairline adjustment easy.

Micrometer adjustment for calibrating static element and zeroing pen.

All parts of differential movement subject to corrosion are of stainless steel.

All-welded manifold.

Overcomes small leaks.

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Pittsburgh Equitable Meter Company

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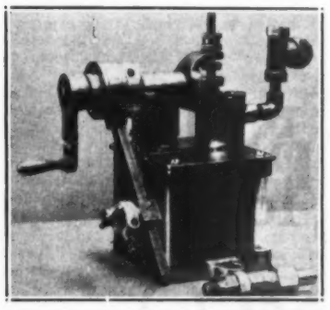
New York City, Chicago, Ill., Tulsa, Okla., Dallas, Texas, Columbia, S. C., Salt Lake City, Kansas City, Mo., Seattle, Wash., Houston, Texas, Los Angeles, Calif.

EMCO METERS AND REGULATORS

Oil Field Equipment and Supplies

HILLS-McCANNA OFFERS IMPROVED LUBRICATORS

Hills-McCanna lubricators are now obtainable with either the new K-K (Kam-Klutch) drive or the ratchet type of driving mechanism. The K-K mechanism comprises a right-hand part which attaches to the standard for the purpose of holding



the crankshaft when on the backstroke, and a left-hand part which attaches to the driving rod operating the crankshaft on the forward stroke.

The principle of the Kam-Klutch is spring-held rollers embodied in a housing, which work with and against the crankshaft when operating. The drive permits attachment to high-speed driving arms in any position within the arc of a complete circle, and gives the lubricator greater speed in oil delivery when and where needed. All Kam-Klutch parts are hardened and packed in grease for trouble-free operation. The Kam-Klutch is interchangeable with the present ratchet drives, in keeping with the policy of making improvements that will not render former models obsolete. Shop tests equivalent to five years of continuous satisfactory service have been run.

Another feature included in the Kam-Klutch driven types of Hills-McCanna lubricators is the new style charging arm or crankshaft for flushing cylinders when starting up or to increase flow when lubricator is in operation. Further particulars are available by writing to the manufacturer, Hills-McCanna Co., 2349 Nelson Street, Chicago.

WICO WIDENS SCOPE OF SERVICE IN THE FIELD

The Wico Electric Co., Springfield, Mass., manufacturer of Wico magnetos, has increased the scope of its field service by placing Robert Phillips in the Seminole area, with headquarters in the office of the National Supply Co., Seminole. On October 1, Wico placed Glenn Hendrickson in Texas, with headquarters in the office of the Generator Service Co., 1151 Commerce Street, Fort Worth, Tex. Any oil company or operator desiring the assistance or service of these men can reach them at the addresses given or through the company's direct factory branch, 115 West Eighth Street, Tulsa. Leon F. Smith, manager of the Tulsa branch, spends most of his time in the field.

Wico operates a large service branch in Tulsa, where factory-trained men are in constant attendance, and Wico users are reported to have found this branch a great aid. Machines repaired there are fitted with genuine Wico parts.

Jack C. Ballagh, secretary of Patterson-Ballagh Corp., Los Angeles, Calif., has returned from a two months' trip to Europe, where he laid plans for an expansion of field service in the distribution of Bettis protectors. Mrs. Ballagh accompanied him on the trip.

AMONG THE EQUIPMENT HOUSES

The Southwestern Engineering Corp. has moved its general offices from 606 South Hill Street, Los Angeles, Calif., to its manufacturing plant at 4800 Santa Fe Avenue, that city.

F. W. Peek, Jr., has been appointed chief engineer of the Pittsfield, Mass., works of the General Electric Co., it is announced by E. A. Wagner, manager of the works. Mr. Peek succeeds Guiseppe Faccioli, who retired from active participation in the affairs of the company because of ill health.

The American Manganese Steel Co., Chicago Heights, Ill., has been granted an exclusive license by Grover C. Voit of Hopedale, Ohio, to manufacture and sell the Voit dipper front covered by a United States patent.

The Underwriters' Laboratories has recently established label service on electric motors for use in hazardous locations as defined in Article 32 of the National Electric Code.

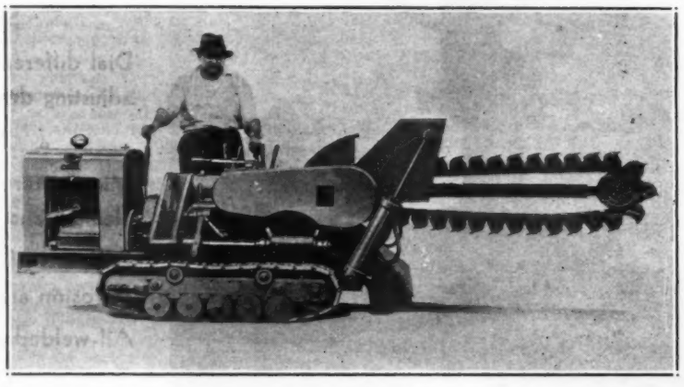
The Kirk-Morrow Iron Works Co., Tulsa, has established a New York office at 150 Broadway, with Val R. Wittich, Jr., in charge. The company's principal lines consist of steel derricks, steel fronts, all types of steel wheels and sand reels, crown blocks and rig iron equipment, steel tanks up to and including 120,000-bbl. capacity, with or without floating roofs.

James K. Aimer, 230 Park Avenue, New York City, has been appointed assistant general manager of sales in charge of railroad, locomotive and car equipment sales, also bar iron and billet sales for the Reading Iron Co. In addition he will direct the sales of Reading charcoal iron boiler tubes, formerly under the direction of G. H. Woodroffe, metallurgical engineer.

Champion & Barber, manufacturers of the Champion all-steel rotary hose and of New-Method slotted pipe, have been made distributors for Victaulic couplings for use on Naylor Spiralweld pipe in California, Utah, Nevada and Arizona. This gives Champion & Barber a complete line of coupling and line pipe stocks, they having previously obtained the distributing rights for Naylor Spiralweld pipe.

The Kennedy Valve Manufacturing Co., Elmira, N. Y., has appointed John J. Foy as its southern California representative, with headquarters at 210 Transportation Building, Los Angeles.

"GOLDIGGER" MAKES SHORT WORK OF NARROW DITCHES



The great amount of hand work required in digging ditches for small pipe brought about the development of the Little Goldigger by the C.H.&E. division of the National Equipment Corp., Milwaukee, Wis. This labor-saving ditcher, only waist high, not only digs a trench many times faster than it could be done by hand, but it removes a comparatively small quantity of dirt because of the narrow trench. Backfilling is reduced to a minimum.

Designed to dig a trench from 3 inches to 6 inches wide, the C.H.&E. Goldigger has a wide utility range for digging gas service connections, high-pressure gas lines, small oil pipe lines, ornamental lighting cables, telephone cables, sprinkling and drain pipes for golf grounds and airports, and in any other underground work that requires a trench up to 6 inches in width and 48 inches in depth.

Digging speeds vary from 1 to 6 feet per minute. Two speeds are available without changing sprockets and 36 speeds may be had by changing sprockets. Full multiplane traction with low ground pressure permits operation on wet soil without miring and on lawns and parkways without injury to the grass.

Operating levers have been centralized on one side of the Goldigger for convenience of the operator in keeping his machine digging to the best advantage at all times. It can be used in small spaces and its narrow width will allow it to pass buildings, trees, electric light and telephone poles, etc., where the clearances are small.

Rugged construction has been well balanced throughout the machine. All parts are built for severe and continuous service. Gears and sprockets are of steel, heat-treated. Gears are enclosed in gear cases and run in oil. The oil in the main gear case is used for the hydraulic boom lift and is circulated back over the top of the gears in the case, giving them a continuous oil bath. A four-cylinder 12-horsepower engine provides power for all operations. An eight-page illustrated folder with details and specifications may be obtained from the National Equipment Corp., or any of its district representatives.

DRAGLINE BUCKET LIGHT BUT OF GREAT STRENGTH

The Northwest Engineering Co., Chicago, builder of shovels, cranes and draglines, has announced a new dragline bucket. Through scientific design and the use of special alloy steels, a bucket of exceptional strength and light weight

has been devoloped. In testing this bucket it has been subjected to a load of 34,000 pounds, enough to spring it temporarily out of shape, but it has always resumed its original form.

The distinguishing feature of the Northwest dragline bucket is in the arch. This is an I-beam section, a sturdy casting made to stand shocks. The hitch is so placed that blows from striking the bank are taken on the arch and not on the side plates. The lip differs from the usual casting in being of rolled alloy steel. This is welded directly to the arch and the two are heat treated as a unit.

The basket or load-carrying portion is formed from a single piece and welded at the corners. This gives a clean, smooth interior that sheds sticky materials quickly.

The dumping sheave is designed to promote maximum cable life. It and the hoist trunion pins are of hardened steel and all castings are heat treated. All welding is done by a special method that is said to assure a ductible, flexible weld that will withstand shock.

PUMPS MADE TO HANDLE ANY LUBRICATING FLUID

The new ball-bearing Model CP oil pumps recently perfected by the Tuthill Pump Co. of Chicago are primarily intended for hydraulic applications but also suitable for handling all lubricating liquids. The pumps are of the rotary, internal gear, positive delivery type with improved stuffing box and the ball-bearing feature incorporated. They are built to handle pressures up to 200 pounds per square inch on liquids with fair lubricaitng qualities. Four sizes are available ranging in capacity from 2 g.p.m. at 300 r.p.m. to 40 g.p.m. at 1,200 r.p.m.

Construction features include ball-bearings to absorb the thrust and radial loads of the rotor, compactness, and a new standard mounting design, primarily arranged for endmounting with an optional bracket for users deeiring foot type of mounting. The end type of mounting makes it convenient for the designer to incorporate the pump into his machine inconspicuously and with a minimum of space.

Operating features include development of pressures up to 200 pounds per square inch; efficiency in performance as high as 70 per cent on good grades of lubricating oil; direct-motor drive at speeds up to 1,200 r.p.m.; maintenance of prime by use of upright ports and ability to drive pump in either direction of rotation, suction and discharge ports interchanging when the rotation is reversed. Catalogs and prices are available upon application to the Tuthill Pump Co., 131 West Sixty-third Street, Chicago.

Action and Satisfaction

B.S.&B.

Perfection Vapor Pressure TANKS

There is both action and satisfaction in B.S.&B. PERFECTION Vapor Pressure Tanks, and B.S.&B. service.

When you need a flow, or storage tank, it requires only a few hours time from the receipt of your order to the lease. With our 50 Field Stations, scattered throughout the Mid-Continent and Rocky Mountain Fields, each equipped with large stocks, and our own trained erection crews, we can give you mighty quick action on the erection of these Tanks. That's why our service has been called, "SERVICE ON THE DOT—SERVICE ON THE SPOT."

And then when these tanks get into action!! When the crude flows in, it stays in, until emptied into the pipe line. It is not lost by evaporation resulting from the escape of the lighter fractions.

B.S.&B. PERFECTION Vapor Pressure Tanks are truly "the watchdog of your crude," because they retain the light fractions of the crude, at well-head gravity. The B.S.&B. Thief Hole Pressure Vacuum Valve operates automatically at 16 ounces pressure and 2 ounces vacuum.

Let us prove to you the action and satisfaction of B.S.&B. service. We'll do so if you but write us. Dept. B-43.

EFFICIENT B S & B SERVICE DEPENDABLE

Black Sivalls & Bryson INC.

BARTLESVILLE ~ OKLAHOMA

Our Watchword QUICK S.O.T.S.

Oil Field Equipment and Supplies

MORRISS REPRESENTING KEROTEST IN NEW YORK

The Kerotest Manufacturing Co., of Pittsburgh, Pa., manufacturer of high pressure cast steel valves and fittings for

Gray I. Morriss

oil field and refinery service have opened offices in New York at Room 598, Graybar Building. Gray I. Morriss has been appointed eastern representative and will make headquarters in New York. Mr. Morriss for many years was manager of the refinery products division of the American Radiator Co.

REPUBLIC STEEL BEGINS SERIES OF EXPERIMENTS

The Republic Steel Corp. is building a new furnace in its laboratory in Canton, Ohio, to conduct a series of experiments with stainless steel tubes for oil refineries. With the new equipment, the company's metallurgists expect to develop steels possessing certain properties to meet special requirements of the oil-cracking industry. Republic's Enduro stainless steels are now used in the oil industry where material is needed to withstand high temperatures and pressures, and further developments are looked for which will widen the usefulness of these steels.

The new furnace will test stainless tubes to destruction under high temperatures and pressures. This will make it possible for metallurgists to study the behavior of the tubes under conditions exceeding those found in actual service. The testing furnace consists of an outer casing of steel 2½ feet square by 4 feet long. In the center of this casing, and insulated from it, is an extra heavy pipe which serves as the heating chamber. It is heated by four glo-bars above and below the pipe.

The tube to be tested is then placed in the center of the heating chamber and with the use of CO_2 gas very high pressures are obtainable and it is possible to break the tube at any given temperature. The tube under test is plugged at each end with a heavy steel plug which is welded in. The CO_2 gas is introduced into the tube through extra heavy three-quarter-inch pipe and a hydraulic gauge registers the pressure.

James H. Raymaker, of Chicago, former consulting engineer with Ford, Bacon & Davis, Inc., New York, has been engaged as general manager of the plant of the National Transit Pump & Machine Co., Oil City, Pa.

NO INTERRUPTION OF CLEANING AND PRIMING MACHINE

This picture was taken near Lewistown, Ill., on the Canton-Havana gas pipe line which is being laid for the Central Illinois Public Service Co. A Caterpillar 60, with W-K-M side boom and special hanger, suspends the pipe so that the cleaning and priming machine can operate continuously. A second 60 holds the pipe for the second coating and the paper wrapping.

NOTES ABOUT TRADE LITERATURE

"Another Super Grader Caterpillar," "Detachable Trailer Patrol Maintainer" and "Caterpillar Twenty Motor Patrol" are titles of three broadsides just issued by the Caterpillar Tractor Co., Peoria, Ill.

A new bulletin on non-clogging pumps of the enclosed-shaft type has been produced by the Chicago Pump Co., Chicago.

Axiflo, Hiflo and Coniflo deep-well pumps are described and illustrated in a 32-page bulletin published by the Worthington Pump & Machinery Corp., Harrison, N. J.

The 1931 "Eluceydator" notebook is ready for distribution and any persons connected with the oil industry can get a copy by sending a request to the Tulsa office of the Lucey Products Corp.

Over 20,000 Link-Belt Caldwell sprockets are always in stock, and this is the theme of the new 24-page book, No. 1,267, issued by Link-Belt Co. and H. W. Caldwell & Son Co., its Chicago subsidiary.

SINCLAIR INSTALLS FIRE AND FIRST-AID FIELD UNIT

C. A. McNamara, purchasing agent; S. C. Phillips, superintendent of transportation; and H. W. Bogges, safety engineer, of the Sinclair Oil & Gas Co., with W. L. Walker of the American Fomon Equipment Co., of Tulsa, have designed and had built by the Oklahoma Auto Body Works in Tulsa, what is considered one of the most efficient and compact fire and first-aid field units ever placed in the oil field. This unit, built on the Sinclair Oil & Gas Co.'s standard 1½-ton transportation truck, is equipped with a Barton centrifugal pump, having a water capacity of 400 gallons per minute at 100-pound pressure and capable of pumping water mixed with sand or mud without damage to the pump.

Regular fire department hose is provided for large streams of water in combating ordinary fires or for delivering foam to oil fires. Small hose equipment is used for grass or prairie fires. A booster tank carrying 150 gallons of water allows this unit to produce 1,500 gallons of foam (which is equal to the capacity of five 40-gallon foam engines) without connecting to a water supply. The two large Fomon foam generators have a capacity of 1,000 gallons of foam each per minute and one of 300-gallon capacity. The truck carries 1,000 pounds of Fomon foam chemicals, besides extinguishers for electrical, oil and ordinary fires.

The lighting equipment consists of a large swivel searchlight, two small searchlights and vapor-proof portable electric hand lanterns. The hand equipment includes a fireman's hand-ax, crowbars, hose clamps, pike poles, wall and roof ladders and asbestos suits for protecting men fighting oil and gas fires. Stretchers, gas masks, emergency splints and a first-aid supply kit packed in metal cupboards mounted on the side of the body, complete the outfit.

This fire and first-aid unit is similar to the one recently delivered to the Indian Territory Illuminating Oil Co. and embodies suggestions made by that company's safety engineer, R. B. Walters.

HARRY KASSEBAUM JOINS RAPID FIRE PREVENTION

Harry A. Kassebaum, well-known oil-tool sales executive, has been made sales manager for the newly formed Rapid

Harry A. Kassebaum

Fire Prevention Co., Ltd., manufacturer of water-fog operated fire prevention equipment, with offices at 1520 East Slauson Avenue, Los Angeles, Calif. Since 1910, Mr. Kassebaum has been connected with some branch of the oil industry, starting with the Esperanza Consolidated Oil Co. in Coalinga, Calif., and later serving as assistant to the president of the California Petroleum Corp.

For three and one-half years prior to joining the Rapid Fire Prevention Co. Mr. Kassebaum was manager of the export department of the Elliott Core Drilling Co., of Los Angeles. B. W. Gillespie, formerly superintendent of California service for Elliott, will succeed Mr. Kassebaum in that position. E. A. Spencer, Jr., will succeed Mr. Gillespie.

SLUSH PUMP PISTON IS BUILT FOR HARD USAGE

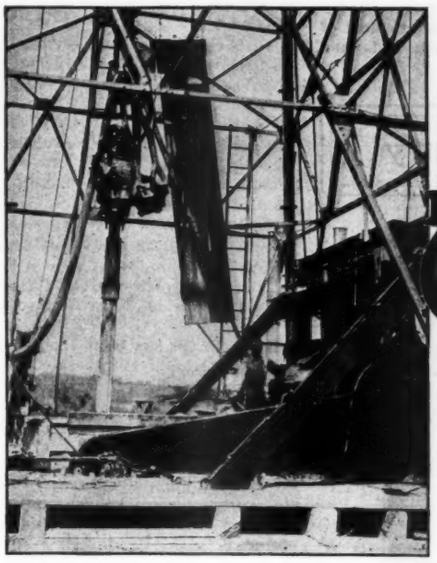
The Ramhead slush pump piston, made by the Alamo Iron Works, San Antonio, Tex., is of practical and tested design which under comparative field tests is said to show unusually long life with a minimum expense and servicing. The conventional piston body with follower plates and expanding rubber packing is the basis of design. The metal parts are heavy section semisteel castings to withstand severe operating strains. The end plates are of sufficient distance from the pump liner, making contact and grinding action impossible, yet the metal parts support and protect the rubber packing.

In effect the piston functions as though it were a single piece of metal. When properly installed, the manufacturer says, this piston will not become loose on the rod while in operation. The rubber backing in no manner affects the connection between the piston and the pump rod.

The heavy metal ring around and through which the rubber packing is molded forms a backing or support giving strength to the packing where it is needed and at the same time allowing for resiliency necessary to obtain long life of the packing. The rubber compound is a tough high-quality stock vulcanized onto the metal ring with a bond between the two.

The flexible ends of the rubber packing respond to piston action. Expansion and resulting friction are proportionate to the pressure requirement and at a minimum under all operating pressures. The self-sealing effect is obtained through expansion of only about one-third the length of the piston face. This effective seal prevents grit from passing between the piston and liner, thus reducing the wear of both.

Timken Bearings Carry The Main Load In Lucey E-6500-A "Quad" Swivels



Lucey Timken-equipped "Quad" Swivel, Draw Works and Rotary at work on a 6500 foot hole in Oklahoma.

TIMKEN BEARING EQUIPPED

Lucey Timken-equipped "Quad" Swivel at work on another 6500 foot hole in Oklahoma.

Down . . . down . . . down . . . six, seven, eight thousand feet—or more. Section after section of pipe added to the enormous load which the swivel must sustain as the hole gets deeper and deeper.

What a test for a swivel—and what a test for the swivel bearings upon which this ponderous weight hangs—exerting a pressure that no ordinary bearing could hope to endure.

But all's well in the Lucey "Quad" with Timken on the job. No need for the slighest apprehension regarding its ability to stand the gaff, for this Timken Bearing is designed to handle a load of 365,000 pounds at 100 revolutions a minute!

Watch any Timken-equipped swivel at work. See how smoothly, how effortlessly, how silently it turns —giving no hint of the weight of the thousands of feet of pipe which it may be carrying—no suggestion of the terrific shocks it must bear as the drill strikes tough spots deep in the ground.

Day after day . . . month upon month the swivel carries on—asking little attention—and generally receiving less. Saving power; saving lubricant . . . saving time.

And not only in Lucey swivels are Timken Bearings serving oil operators so advantageously; but in Lucey draw works, rotaries and other equipment they are also found safely carrying all loads—radial, thrust and both combined, under all conditions.

Why are Timkens thus able to perform exceptional tasks . . . tasks usually far beyond the capacity of any other type of bearing? The answer is *Timken tapered construction plus Timken-made steel*—the combination that has licked industry's toughest jobs —the principle that has proved its right to leadership for over 30 years—the reason why there are more Timken Bearings in the oil fields than all other makes combined.

TIMKEN *Tapered Roller* **BEARINGS**

Personal Paragraphs About Oil Men

J. B. Kennedy, of Ranger, Tex., has been appointed umpire of the Ranger district of Central Texas.

* * *

G. D. Locke, vice president of the Barnsdall Refineries, Inc., at Chicago, Ill., was spending a few days in Tulsa.

* * *

J. B. Barnes, Jr., general attorney for the Midwest Refining Company, with Denver, Colo., offices, spent the holidays in Casper, Wyo., with his family.

* * *

W. C. Davis, district land man for the Shell Petroleum Corporation, San Angelo, Tex., and family, spent the holidays in Shreveport, La., their former home.

* * *

W. W. Boyer, chief geologist for the Consolidated Royalty Oil Company with Casper, Wyo., office, Mrs. Boyer and their son, are in Texas where Mr. Boyer is busy for his company.

* * *

Mrs. A. G. Tackabury, formerly a secretary in the Casper, Wyo., offices of the Texas Production Company, has gone to Panama where she will spend the winter with relatives.

* * *

Executive Vice President R. E. Aitcheson, of Natural Gas Properties, Inc., has returned to San Francisco, Calif., from an extensive trip through the Oregon and Washington properties.

* * *

J. George Wright, formerly Osage Indian agent, and Mrs. Wright, leave Pawhuska, Okla., January 8, to make their home in Chicago, Ill. Mr. and Mrs. Wright have lived in Pawhuska for 21 years.

* * *

Mr. and Mrs. W. C. MacMahan were presented with a late Christmas present on December 27 in form of a 7½-pound baby girl. Mr. MacMahan is geological scout for the Ohio Oil Company, Tyler, Tex.

* * *

Paul Ruedemann, geologist, with Ralph E. Davis, was at home during the holidays after field trips into Montana and to the Gulf Coast that have kept him away from Tulsa practically all summer and fall.

* * *

Thomas R. Weymouth, New York City, vice president of the Columbia Gas & Fuel Company, and W. J. DeMay of Columbus, Ohio, were in Toledo, Ohio, working out a proposed revision of natural gas rates for Toledo.

* * *

A. F. Nixon, vice president and sales manager of the Happy Belting Company, is now located permanently at Fort Worth, Tex., in charge of that office and the Texas territory which embraces the Gulf Coast district also.

* * *

Announcement is made by the natural gas division of the Empire Companies of the selection of H. B. (Bert) Milam for the position of assistant superintendent of the pipe line department. Mr. Milam has been associated with the gas division 20 years.

* * *

C. P. (Jimmie) Chisholm, land man for the Eastland Oil Company, Fort Worth, Tex., and Miss Lochlin Farrar of that city, were married in St. Patricks Cathedral in December making but a short honeymoon trip, then back to Fort Worth where they have made their home.

* * *

C. O. Rison, formerly superintendent of the oil department of the Indian Territory Illuminating Oil Company at Bartlesville, Okla., is now in charge of matters pertaining to oil proration in all fields where the company has production, with headquarters at Oklahoma City, Okla. F. E. Turner, has assumed the duties of the oil department at Bartlesville, and F. T. Jones will assume the responsibilities for the outside areas with headquarters at Amarillo, Tex.

H. B. Smith, vice president of the Sinclair Oil & Gas Company, made a trip to East Central Texas during the past week.

* * *

Hale Soyster, deputy supervisor at Casper, Wyo., of the United States Geological Survey, has returned from a three weeks' trip to the Pacific Coast.

* * *

E. H. Petterson, of Bairoil, Wyo., assistant superintendent of operations for the Producers & Refiners Corporation, has been made superintendent of operations for the Parco Oil Company, Ltd., and is to have headquarters in Calgary.

Men of the Industry

Lee R. Slater

Lee R. Slater, general superintendent of production for the Darby Petroleum Corporation, saw much country during his early years in the oil business. He was born in Butler County, Pennsylvania, where his father, D. A. Slater, was an oil operator. Upon finishing high school young Lee began working as a roustabout for his father's firm. The older Slater went to Graham Island, off the Canadian Pacific Coast, to prospect for oil and was reported to have lost his life in a storm at sea. Lee, then in Pennsylvania, started for the island to get such information as he might. He found his father alive and well. They rigged up for drilling on the island and spent a year in a fruitless search for oil, returning then to Pennsylvania.

Shortly after this Lee started on travels that took him to Indian Territory, Texas, California, Mexico and many fields in the present Mid-Continent area. He worked as a driller in the Cushing Field. After the Cushing boom had subsided he went to Shamrock and after 18 months in that field put in the next year wildcatting in Baylor County, Texas. Then he worked for the Magnolia Petroleum Company for two years in south Oklahoma fields. He left Magnolia to take charge of developing the Healdton Oil & Gas Company properties, headquartering in Tonkawa. Later he joined the Marland Oil Company as general superintendent of production for the Panhandle and North Texas districts.

Mr. Slater left the Marland company in 1925 to join the Independent Oil & Gas Company in charge of production and development of its properties in the Seminole area. Three years later he became affiliated with the Darby Petroleum Corporation as general superintendent of production.

Ivan Itstot, an independent oil operator at Blackwell, Okla., has moved his office and home to Wichita, Kans.

* * *

John Cusack, in the land department of the Skelly Oil Company at Roswell, N. Mex., has been transferred to Wichita, Kans.

* * *

Stephane Buescu has been appointed the technical director of the Rumanian State Oil Pipe Line Department.

* * *

O. Bechtel, sales engineer for the Parkersburg Rig & Reel Company, formerly located at Parkersburg, W. Va., has been transferred to the Fort Worth, Tex., office.

* * *

Charles T. Lupton, consulting geologist, was in Casper, Wyo., on his way into western Nebraska and South Dakota where he plans to do extensive work in the next few months.

* * *

S. J. Cordell, of the Cities Service Refining Company, of Boston, Mass., and at one time in charge of the Tulsa office of the Cities Service Company, was a visitor in Tulsa during the week.

* * *

J. P. David has been appointed purchasing agent of the Magnolia Petroleum Company, Dallas, Tex., to take the place of E. R. Folmar who has been with the company for about 30 years, and is now retired.

* * *

After undergoing an operation for appendicitis, Wyman Howells, district sales representative, Reading Iron Company, Pittsburgh, Pa., is making a good recovery and will resume his duties in the near future.

* * *

J. W. Minton, paleontologist for the Sun Oil Company, Dallas, Tex., was married to Miss Lucy Ellen Brown at her home in St. Joseph, Mo., on December 26. They will be at home in Dallas where Mr. Minton is located.

* * *

Alexander Duessen, consulting geologist of Houston, Tex., whose home is in Denton County, underwent an operation for the removal of the appendix recently at the W. I. Cook Memorial Hospital. His condition was reported satisfactory.

* * *

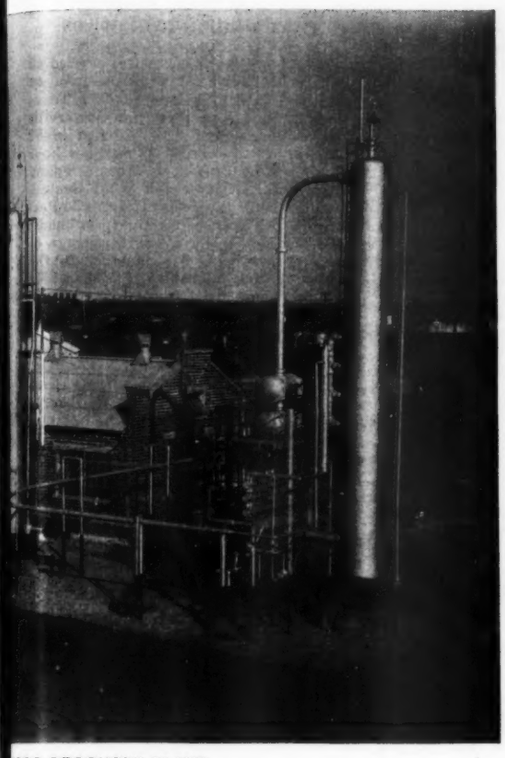
L. L. Foley, of the Mid-Kansas Oil & Gas Company, Tulsa, will present his paper on "The Mechanics of Folding and Faulting," with illustrated slides before the Kansas Geological Society, January 10, at Wichita, Kans.

* * *

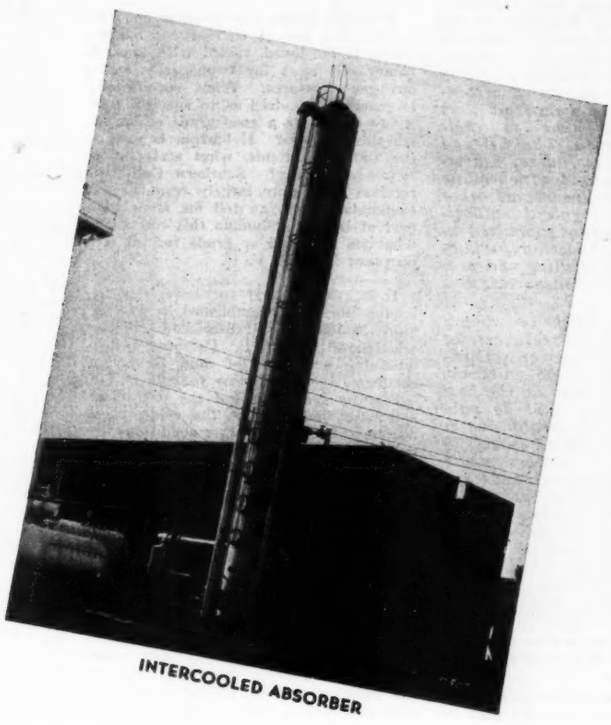
A. F. Garrett, W. A. Rowsey and Paul Bagley left Tulsa December 31 to establish offices in Dallas, Tex., as a result of the purchase of the North Texas properties of the Chestnut & Smith Corporation by the Lone Star Gas Company. Mr. Garrett will head the sales department of a newly formed subsidiary of the purchasing company, to be known as the Lone Star Gasoline Company, and W. A. Rowsey will be traffic manager. Messrs. Garrett and Rowsey held similar positions in the Chestnut & Smith Corporation in Tulsa.

* * *

Dr. Harold Hoots, a member of the Union Oil Company's geological department, and W. D. Rankin of the Continental Oil Company, have been elected president and secretary-treasurer respectively of the Branner Geological Club, which is composed of California geologists. Doctor Hoots, before joining the Union Oil Company of California, was affiliated with the United States Geological Survey. The Branner Club, with approximately 250 members, holds monthly meetings which are devoted to geological discussions both general and specific in nature. The club derives its name from the late Dr. John Casper Branner, who for a number of years headed the department of geology at Leland Stanford University and subsequently became president of the university itself.

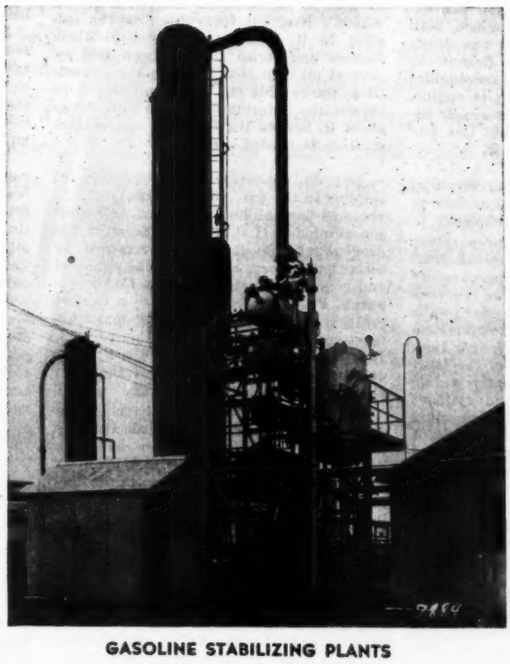


APOR RECOVERY PLANT



INTERCOOLED ABSORBER

FURNISH ESTIMATES
NEERING INC. EQUIP-
DER THE DIRECTION
COMPLETE TURN-KEY
E) INSTALLATIONS.



GASOLINE STABILIZING PLANTS

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SUPPLY
NIES

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

LUBRICATION NEEDS DIFFER

Here is a peculiar thing that I have noticed in oiling two different engines, and I am writing to see if you can explain it. We have two gas engines, both of them vertical. One is of the two-stroke cycle type and the other of the four-stroke cycle. The oil that I use on these engines works all right on the four-cycle engine, but it burns right up on the two-cycle engine's piston and cylinder walls. Can you offer an explanation?—T. G. R.

The differing lubricant requirements of your two engines are explained as follows by D. H. Foster, lubrication engineer:

Since there are three preparatory strokes to each power stroke in the four-stroke-cycle engine and one preparatory stroke to each power stroke in the two-stroke-cycle engine, the cylinder walls and piston of the two-stroke-cycle engine are exposed to hot gases longer than the cylinder walls and piston of the four-stroke-cycle engine. Consequently a lubricant used on the piston and cylinder walls of a two-stroke-cycle engine must be more heat resistant than the lubricant used on the cylinder walls and piston of a four-stroke engine of the same size and operated at the same speed. Also the lubricant used on the cylinder of the two-stroke engine must necessarily distribute itself readily over the cylinder walls in order to insure proper lubrication.

It is essential that the lubricant used on the cylinder and piston of the four-stroke-cycle engine be heat-resistant and distribute itself readily over the cylinder walls but the cylinder walls are not so hot and there are three preparatory strokes to each power stroke permitting a better distribution of the oil film over the cylinder walls before it is subjected to the heat of the power stroke. Consequently an oil that gives satisfactory service on a four-stroke-cycle engine may not be satisfactory on a two-stroke-cycle engine.

SOURCES OF BARIUM

I would appreciate information concerning the use of barium (or barite), which is employed, mixed with mud, in rotary oil fields for temporarily casing out gas pressures. What specification is generally required as to specific gravity to constitute a good grade of barium for this purpose? If barium is used in the Oklahoma fields, what state is the source of supply? Southern California receives its supply largely from British Columbia. Can you tell me from what part of British Columbia this comes and what its standard or grade for oil well purposes is?—W. F. C.

It is assumed that you have been following the articles published in The Oil and Gas Journal on rotary mud problems and those by C. P. Parsons dealing with the properties of mud fluids are commended especially to your attention.

Specific gravity is not the only characteristic that governs the selection of barium sulphate, but other conditions are necessary to make good mud. Fine grinding is essential, and the manufacturers add other materials to give their product the required characteristics for mud mixtures.

Most of the barium sulphate used in Oklahoma fields has come from deposits in Missouri, processed by plants at the mines for use in the wells and sold under the trade name of the manufacturer. This department is unable to tell you from what part of British Columbia part of the California requirements may come. If you will address the Department of the Interior, Ottawa, Canada, you probably can obtain definite information as to the sources of barium in Canada.

REMOVING SULPHUR FROM GAS

I have been selling gas to a factory in a small town, but this factory does not need the gas any longer. I have a chance to sell it to residents of the town in which I live, but they object to the sulphur in it, which they say kills their flowers and ferns. I have been told by several oil men that I can make an outfit to purify this gas, but I am unable to obtain any information as to how to go about it, beyond the fact that an alkaline solution is needed.—R. C.

You do not state the percentage of sulphur in the gas, nor its form, but it is assumed the sulphur is carried as hydrogen sulphide. If it is in the form of hydrogen sulphide it may be removed by several processes, some of them patented and controlled by the Koppers Co., Pittsburgh, Pa. That company uses a caustic solution to wash the gas and it manufactures complete equipment for this process. If your plant needs to handle a large quantity of gas it is suggested that you get in touch with this company.

If on the other hand you have only a small quantity of gas that needs treating it would be possible to remove hydrogen sulphide by washing the gas in clear water. The water will take up the hydrogen sulphide in varying quantities depending upon temperature and pressure, but with plenty of clear water the gas can be washed practically free of the sulphide element.

This procedure might cause some water vapor to be carried over with the washed gas, and in that case it would be necessary to dry the gas before distributing it. This could be done by using calcium chloride, as described in an article entitled "Salt Creek Field Recovery Methods," by F. M. Cole, in The Oil and Gas Journal of December 19, 1929.

In any event it seems that you have a problem for a gas engineer and it is suggested that you consult with one for there are unknown factors that must be considered before you can install any kind of plant, and in the long run it probably will save you money to engage a consulting engineer.

Articles were published in 1927, 1928 and 1929 in The Oil and Gas Journal covering the use of sulphur gas for domestic purposes and you can find references to them in the indexes published every six months.

CORROSION CAUSE AND CURE

I noticed that in your answer to a question by F. S. H. in your issue of December 11, 1930, regarding the use of protective coatings in combating corrosion of pipe lines you did not say anything about experiments along this line which I believe some agency of the Government is making. Is not such an official research being made?—T. D. I.

The Bureau of Standards of the United States Department of Commerce, with the co-operation of public utility organizations, is undertaking to ascertain the causes of underground corrosion, methods of identifying corrosive soils, the characteristics which a satisfactory pipe coating must have, and methods for ascertaining whether a coating is suitable for a given soil condition.

In each of the 100 locations where field tests are being conducted local public utility companies furnish the test plots and the labor for burying and removing specimens. In addition 50 manufacturers co-operate by furnishing considerable quantities of their materials for the test.

Nearly 20,000 specimens of materials, comprising several kinds of iron, steel, brass and copper pipe, a variety of alloys intended for service under special conditions, and a large number of metallic and organic coatings are under observation. Tests are being conducted in nearly all parts of the United States where pipes are extensively used. The work began about eight years ago with the burial of specimens of iron and steel pipe for the purpose of determining the extent and seriousness of soil action. From time to time the number of test locations and the variety of specimens have been increased as the need for information became more fully appreciated.

At two-year intervals some of the specimens of pipe are removed and returned to the Bureau of Standards for study. The rates at which they lose weight and at which pits deepen are determined. When sufficient data have been collected, it will be possible to predict the life of the several pipe materials in various soils and to determine which materials are best adapted to any local condition. These data and corresponding data on the behavior of protective coatings will enable the engineer to select the most economical protection for new pipe lines and old ones that have to be reconditioned. Reduction of the cost of maintaining lines should result in reducing the cost of fluids which the lines transport and so the public as well as the owners of the lines should be benefited.

WHY WAS IT CALLED THAT?

SPIDER

"Spider" is a term applied to many mechanical devices which embody a skeleton or frame in which there are radiating arms or members. The appellation obviously originated in the general likeness of such devices to the insect of the same name.

FAST DRILLING RECORDS

Several weeks ago there was carried on the "Field Problems" page an item on fast time made by a crew for The Texas Company on a well in the Carterville Pool of Bossier Parish, 3,125 feet in 82 hours, or an average of 38 feet per hour actual drilling time. The same company cites another of its wells, No. 1 Sentell, Section 9-19-14, Dixie Pool of Caddo Parish, in which even better time was made, 2,400 feet in 54 hours, or an average of 44.4 feet per hour. Also another in the Zwolle district of Sabine Parish where there are more hard formations than in Dixie. This was No. 1 Largent, Section 24-8-12, which went 2,300 feet in 67 hours, or an average of 34.33 feet per hour.

At one time the Dixie well was drilling at the rate of 144 feet per hour, making 435 feet in three hours after setting surface casing at 124 feet, which point was reached in two hours. Slowest time on this well was the last 57 feet, drilled in two hours. Formations in the Dixie area were for the most part uniformly softer than in either Carterville or Zwolle.

During the first five hours of drilling the Largent well made 118 feet to casing seat, its best time after that being 356 feet in five hours, or an average of 71.2 feet per hour. From 985 feet to 1,485 feet, the crew averaged 50 feet per hour, and made the last 95 feet in two hours.

J. L. Shea, superintendent for The Texas Company is rather proud of these records and of the record of one company rig between December 20, 1929 to November 28, 1930, during which this rig with Leon Garrison, day driller, and M. H. Williams, night driller, made 13 wells totaling 42,728 feet of hole. Twelve of these were in Carterville: No. 3 Rose, 3,165 feet; No. 2 Peyton, 3,200 feet; No. 3, 3,157 feet; No. 6 Peyton, 3,157 feet; and No. 7 Peyton, 3,168 feet; No. 7 Wilkinson, 3,170 feet; No. 9 Wilkinson, 3,165 feet; No. 10 Wilkinson, 3,170 feet; No. 13 Wilkinson, 3,158 feet; No. 14 Wilkinson, 4,048 feet; No. 15 Wilkinson, 3,168 feet; and No. 16 Wilkinson, 3,158 feet. The last well, No. 1 Linden State Bank, in Cass County, Texas, went to 3,844 feet.—D. H. B.

MOVING THE GAS LINE

Will you please advise me whether or not it is practicable after 12-inch pipe has been laid for the transmission of natural gas to move this pipe to another location several miles away? Does cutting the pipe make it more difficult to weld a second time than new pipe would be?—N. C. S.

While there are several types of pipe that might be used for gas transmission lines, all are reclaimable, according to available information. If it is welded pipe, as your question suggests, that presents no special difficulties in handling. As this department understands the procedure the pipe is not really cut, but the weld is opened and when the ends are cleaned they can be welded again without any special trouble and make a good joint.

You should be interested in the following articles that were published in recent issues of The Oil and Gas Journal about welding of pipe lines: "Electric Arc Welding of Pipe Lines," by C. M. Taylor, June 5, 1930; "Oxy-Acetylene Welded Pipe Lines," by Glenn O. Carter, June 5, 1930.

There are companies operating in all oil fields reclaiming and reconditioning tubular goods of all kinds. Gas pipe lines are purchased by them, and later the material is resold, indicating that the procedure you inquire about is practical and a common practice.

STRAIGHT FACTS

THE FIRST OF A SERIES ON MATERIALS, MANUFACTURING PROCESSES AND FIELD SERVICE TESTS

Why Axelson Rod Stock is the Best Steel Mills Produce

AXELSON rod stock is manufactured in accordance with the best alloy steel mill practice. Exhaustive laboratory tests have always determined the source of this stock:

In chemical analysis the carbon range of the steel is never more than three points plus or minus from specification, whereas standard practice allows a ten-point range. Cast in corrugated ingot molds having hot tops, expansion and contraction is permitted without the danger of cracks developing. Hot tops eliminate pipes in the bloom. After pouring, the molds are not moved for two hours, allowing full time for the metal to solidify.

Ingots are re-heated in "soaking pits" before rolling, then reduced to 11"x12" bloom and sampled for analysis check. The blooms are then pickled and chipped for any defects, re-heated, rolled to 6"x6" billets by the same process, insuring the most uniform product. Axelson rod stock is rolled from the 6"x6" billet on a 12" mill, assuring a distinct grain refinement not possible to obtain in a smaller billet. In reducing the 6"x6" to ¾" bar, Axelson sucker rod steel actually passes through twenty-two sets of rolls, producing a much better grade of steel than if rolled from smaller billets passing through only eight or ten rolls. Two samples are taken from each ¾" bar after it comes from the 12" mill and are then checked for size, roundness and any surface seams. The rod is softened in the hot bed to comply with specified physical requirements. This also serves to relieve any internal stresses or strains induced by rolling or any contraction which has occurred in cooling.

Write for literature giving full details.

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FRICK-REID SUPPLY CORPORATION

AXELSON SUCKER RODS

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

DETERMINING QUALITY OF GASOLINE

What is considered to be the most important test for determining the value of gasoline?—B. I. W.

It would certainly simplify marketing if there were one or two tests that would enable one to grade gasolines, but experience suggests that quite an extensive group of tests are required. Of course, there is the engine test, but this sort of test furnishes data that must be confined to the particular engine and the conditions under which it is operated. It is understood that the question is intended to apply to the laboratory tests as mentioned in standard specifications.

Dr. O. C. Bridgeman of the United States Bureau of Standards considered a good motor fuel before the Society of Automotive Engineers, Philadelphia section, in November, as reported in Automotive Industries, November 15, 1930. He stated that a good fuel is the one that gives the optimum performance considering all conditions of operation. This performance will depend on the composition of the gasoline.

The quality of the fuel depends to a considerable degree on the conditions under which it is used, and a fuel that is good for an automobile engine may not be entirely satisfactory for use in a tractor, marine or Diesel engine. Doctor Bridgeman said he considered the following tests most important as indicating the general qualities of the fuel: (1) Starting. (2) Distribution. (3) Acceleration. (4) Crankcase dilution. (5) Sulphur content. (6) Vapor lock. (7) Detonation. (8) Gumming. To this list should be added reaction, to cover those rare instances when a gasoline containing acid appears.

Much emphasis is often placed on superior power and mileage, but these factors vary only very slightly with different grades of gasoline. Under normal operating conditions and with the same carburetor setting, the mileage per gallons obtainable with the different grades of fuel on the market varies only by about 1 per cent, and the differences in power output are not much greater. Doctor Bridgeman also referred to the complaint often made that there is water in the fuel. He said any water held in suspension by the fuel is filtered out at some point of the line to the carburetor, and gasoline will dissolve very small amounts of water only, about one part in 10,000. If much water gets into the fuel system it is most likely from condensation of atmospheric moisture in the vacuum tanks or main tank.

HELIUM OPERATING COST FOR AIRSHIPS

I am told that helium is a cheaper gas for use in airships than hydrogen and I cannot see this because of the low cost of producing hydrogen. I understand the safety of helium but this has nothing to do with cost. Have you any information about this?—T. C. A.

The basis for the lower cost of helium for airship use as compared with hydrogen is the maintenance or ultimate expense, as has been explained in an article in The Oil and Gas Journal, September 11, 1930, page 78, reporting on the manufacture and use of helium by the Government for the year ending June 30, 1930.

Under the conditions of use it was reported that the expense under the present operations is less than it would cost were the more dangerous gas, hydrogen, used for filling the airships. The cost of making hydrogen, as required for airships, would be much less than helium but the matter of diffusion must be considered. When diffusion of air into the gas envelop reduces the purity of the hydrogen to about 85 per cent, the envelop must be deflated because of the decreased buoyancy, together with the increased explosive and fire hazard. As no safe and economical method has been developed for reclaiming the hydrogen from the hydrogen-air mixture it is permitted to escape into the atmosphere and the envelop must be reinflated with another supply. This operation must be repeated 8 to 10 times a year.

When air diffuses into a helium filled ship, the only serious result is decrease of lifting power, and the helium may be recovered at a cost of from 50 cents to $1.50 per 1,000 feet in plants that have been designed by the Bureau of Mines. The new helium required over the course of a year's operation is only about 1½ or 2 times the volume of the ships compared with 8 to 10 times the volume in the case of hydrogen.

USE AND SOURCE OF BUTYL ACETATE

What is the principal commercial use for butyl acetate and what is the present source of this material? Could it be made from natural gas?—H. O. A.

Butyl acetate is an organic solvent used in the preparation of lacquers and to some extent as a solvent for nitrocellulose, but for the latter purpose is not equal to ethyl acetate.

It appears that the greatest source of the present supply is from butyl alcohol. Calcium acetate is treated with a mixture of normal butyl alcohol and sulphuric acid and the mixture distilled under suitable conditions.

The pure product boils at 260° F., but the commercial product usually contains some impurities, chiefly water and butyl alcohol, so that the boiling range may fall between 225° and 284° F. The specific gravity should be between 0.875 and 0.880.

The foundation material for butyl alcohol is the hydrocarbon butane, which may be found in natural gas and refinery gas, and by appropriate chemical reactions butane may be extracted and converted to butyl alcohol. This, in turn, may be changed into the acetate.

SPECIAL PETROLEUM SOLVENTS

I would like very much to obtain any information covering the relative merits of petroleum spirits, especially highly cracked naphthas, to be used for paints, varnishes, lacquer solvents, rubber use, etc. I understand that there is a lacquer solvent known as Toluol Substitute. I would like to obtain specifications for this.—W. T. B.

The lighter products of petroleum have been recognized for some years as suitable solvents for many substances, among which are fats, waxes, gums, paint products, lacquers and rubber materials. The gasoline obtained from natural gas has constituted the source of a large part of the liquids used for solvent purposes. So far as we are informed the cracking still has not furnished any appreciable part of these liquids.

With the introduction of improved apparatus that will permit of close fractionation it is possible to separate pure hydrocarbons of close boiling range and these are of much better quality than the ordinary natural gasoline.

Pure toluol has a boiling point of 230° F. It is not easy to obtain a commercial article free from sulphur and gums. The hydrocarbon liquid of a similar boiling point is exceptionally free from objectionable impurities. Pure octane boils at 256° F., and has a gravity of about 69 A.P.I. The commercial product is a mixture of octanes, with a boiling range between 210° F. and 280° F. The liquid is free from color, a sweet hydrocarbon odor, negative to the doctor test, and evaporates freely.

With suitable stills and adequate fractionating towers, it is possible to make numerous products of high quality. Among the products now obtainable are propane, butane, pentane, hexane, heptane, octane and related mixtures.

The use of the word substitute, when advocating the use of these hydrocarbon liquids, is unfortunate. Because they pos sess properties that have been recognized as unique in the solvent industries and without doubt these industries will continue to appreciate their merits and use them in increasing quantities.

HYDROGENATION PROCESS AND SOURCE OF HYDROGEN

As a subscriber to The Oil and Gas Journal I have read many articles on the hydrogenation of petroleum. I cannot claim to have read every word you have printed so have failed to learn what is the source of the hydrogen. Does it come from the decomposition of steam passed over red hot coal or from the breakdown of refinery gases generated by an earlier stage of the process? Or, is it planned to use natural gas? My reason for wanting to know more about this point is a curiosity as to whether hydrogen itself is an important item of cost in the process? —J. B. W.

The chemical principle of hydrogenation has been understood and practiced to some extent for many years. The early applications were confined to the hardening of vegetable and animal fats and oils. These were followed by the discovery of synthetic processes for the manufacture of ammonia in which the gases hydrogen and nitrogen were caused to unite by the application of very high pressure, of the order of 3,000 pounds to the square inch, and temperatures between 1,700° and 2,000° F. In this valuable work it was found that the presence of a contacting agent, a catalyzer, greatly accelerated the combination. The first important catalyst to be used was the rare and expensive element osmium.

The history of hydrogenation, as it is thought of today, is in fact the story of the successive discovery of unknown properties of catalytic substances and the discovery of additional catalysts. These new catalysts were so often the more powerful and could be obtained at a lower cost.

Large quantities of carbon monoxide were available in flue gas as the possible raw material for the manufacture of a vast number of substances, always provided that a cheap source of hydrogen could be found. The production of hydrogen from methane was accomplished on a commercial scale in 1927 and this, together with the preparation of very pure iron in a finely divided form as the catalyst, has had much to do with the present status of the hydrogenation of petroleum residues.

Methane, CH_4, large quantities of which are to be found in natural gas and which may be prepared from petroleum, has long been looked to as a potential source of large quantities of cheap hydrogen. When methane is passed over a heated surface at about 2,200° F., each molecule of methane should yield two molecules of hydrogen; or two volumes of the product.

$$CH_4 \rightarrow C + 2H_2$$

This reaction was not suitable for the early ammonia work because it was never fully completed, small quantities of methane always remaining to contaminate the hydrogen. However, for the hydrogenation of coal, tar and similar material this impurity was not objectionable. Further investigation of the reaction led to the better method of decomposition in the presence of steam, according to the equation:

$$CH_4 + H_2O \rightarrow CO + 3H_2$$

Upon treatment with additional steam at a somewhat lower temperature this mixture of carbon monoxide and hydrogen was made to yield more hydrogen and the heavy gas carbon dioxide. The equation is shown thus:

$$CO + 3H_2 + H_2O \rightarrow CO_2 + 4H_2$$

This mixture may be easily purified by physical means, such as cooling, or by chemical means, such as treating with lime water.

$$CO_2 + Ca(OH)_2 \rightarrow CaCO_3 + H_2O$$

By this method the hydrogen is obtained in a relatively pure condition at low cost. A supply of hydrogen at a low cost is an essential consideration for the hydrogenation process.

The process was described by Haslam and Russell in The Oil and Gas Journal October 2, 1930, page 218, from which the following is quoted: "Hydrogen may be produced by any of the usual processes. Since the hydrogen need not be sulphur free, its production from coal or coke by the water gas process is somewhat simpler than when the hydrogen is used for the production of ammonia. Hydrogen may also be produced by liquefaction and distillation of the easily condensable gases from by-product coke ovens, or electrolytically when the economies permit. For the oil industry, with its generous supply of refinery and natural gas, hydrogen may be made by the treatment of hydrocarbons with steam." The reactions involved have been given above.

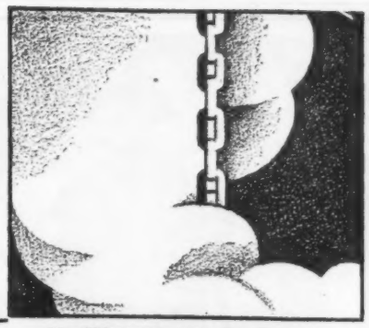
"The oil and previously compressed hydrogen are mixed together and delivered through heat exchangers to a coil furnace and thence to a catalyst-containing reaction vessel. The degree of hydrogenation is carefully controlled depending on the results desired, control in general being maintained either by alteration of catalyst or of operating conditions.

"From the reaction chamber the combined final products and gases pass through heat exchangers and coolers to a high-pressure separator, where the liquid product is separated from the unconsumed hydrogen and other gases. The liquid product is finally reduced to atmospheric pressure and sent to rundown pans."

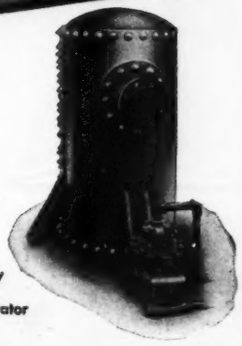
THE

GARDNER-DENVER

PISTON VALVE
12 X 12
TWIN DRILLING ENGINE



WITH SUPERHEATED STEAM....



Heavy Duty Separator

Built for 350 lbs. Steam Pressure
Extra Heavy Crankshaft
Large Timken Main Bearings
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Heavily Re-inforced Frame
Extra Heavy Steam End

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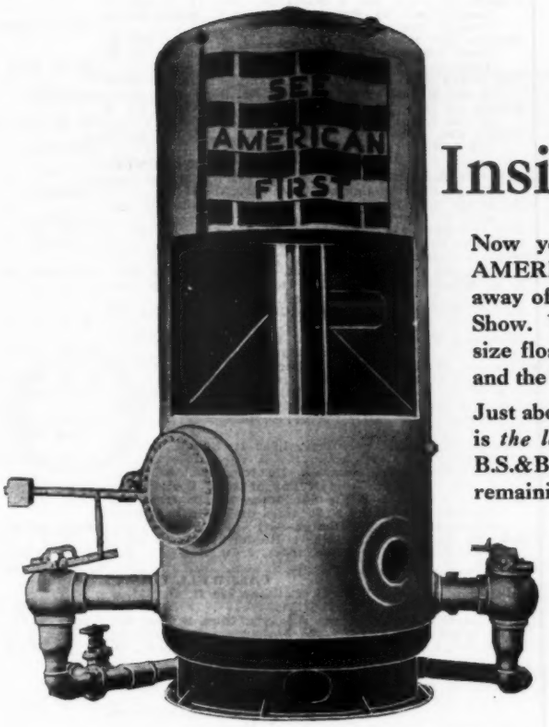
CONTINENTAL

Oil Field Men As They Faced Journal's Cameras

1—Alex Crowell, meter man; J. J. Thompson, compressor operator; R. B. Whitton, plant foreman; H. H. Brown, plant operator; Otto Reiner, gas tester; Venice gasoline plant, Del Rey Oil & Refining Co., Venice, Calif. 2—George Pfau, refinery superintendent, Texas Pacific Coal & Oil Co., Fort Worth, Tex. 3—Jack Connley, Wiggins Tool Co., Los Angeles, Calif.; and Tom Darling, tool pusher, Wilshire Oil Co. of California. 4—L. J. Conner, J. M. Haynes and S. L. Phillips, pumpers, Pure-Van Pipe Line Co., Van, Tex. 5—B. F. Blackman and B. F. Frasher, pumpers, Pure Oil Co., Van Field, Texas. 6—J. A. Berry, superintendent gasoline plant; and John A. Oaks, superintendent refinery, Wilcox Oil & Gas Co., Pampa, Tex. 7—Floyd Litmer, general superintendent; Charles L. Cox, J. E. Smith and N. Vickers, production department, Anderson-Prichard Oil Corp.; and Roy Myers, field engineer, Continental Supply Co.

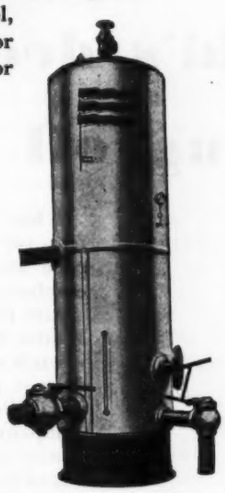


Inside *and* Outside!

Now you may see what's on the inside of the AMERICAN Separator. Here is a view of a cut-away of the Separator that was on display at the Oil Show. You may see a large oil chamber, the over-size float that's on the inside, the Disc Foam Baffle, and the Centrifugal Force Breaker in the oil chamber.

Just above, but not distinguishable in this photograph, is *the last word in Oil and Gas Separation* — The B.S.&B. Spray Condenser, that completely strips the remaining oil from the gas.

Inside, there is efficiency. Outside, as well, with lower fittings that allow a greater convenience in hook-up and savings in time and pipe materials. And besides, these Separators may be rolled like a barrel, when being transported, for there's nothing to break off or become damaged.



May Be Rolled Like a Barrel

The Improved

American Oil and Gas Separator

Equipped with the B.S.&B. Spray Condenser

If you are interested in efficiency, you'll find it in this Improved Separator. The inside man-size float is an important feature, for it works more automatically, assures quicker, and more positive operation in opening and closing the oil valve, and thereby tends to prevent gas from leaking into the stock tanks. It assures a far greater capacity than the small outside float that is now obsolete, as far as AMERICAN Separators are concerned. This float, the B.S.&B. Spray Condenser, and the other features provide ample efficiency.

If you are interested in strength, you'll find it in these Separators, manufactured of flange quality steel of extra thickness with a factor of safety of four; semi-eliptical heads one-eighth inch thicker than the shell, as recommended by the A.S.M.E. Boiler Code. Every AMERICAN is hydrostatically tested to twice the maximum working pressure; electric automatically welded seams equaling the strength of the plate. The care used in the selection of raw materials and in the fabrication of the Improved AMERICAN is your assurance that it will meet the most severe field conditions to which it may be subjected.

We'd like to SHOW YOU what the AMERICAN would do for you, and should like to tell you more about it. May we do so through a Representative, a letter or literature? Please address Dept. BA-15.

American Tank & Equipment Corp.

A SUBSIDIARY OF
BLACK-SIVALLS & BRYSON, Inc., Bartlesville, Okla.
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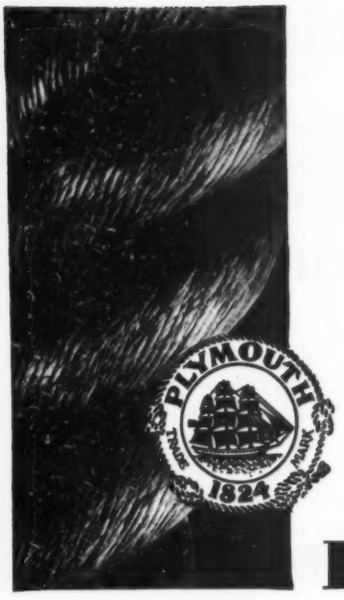

Plymouth Bull Rope passes world's deepest producing oil well test

When oil well drilling reaches 8525 feet, the stress and strain on the bull rope affords a test that demonstrates emphatically the quality of the rope.

And that is the test which Plymouth Manila Bull Rope successfully passed when it was used in drilling the world's deepest producing oil well. This well was drilled by the Texon Oil and Land Company near Santa Reta, Texas, and is now owned by the Continental Oil Co., of Ponca City, Okla.

Bronzo costs no more!

Plymouth Manila Bull Ropes are now treated with Bronzo lubricant, which reduces internal friction and adds to the life of the rope. Plymouth Bronzo Manila Bull Ropes, however, offer this greater service and economy at *no additional cost.*

Sold at the nearest Oil Well Supply Company branch store—along with Plymouth Manila Drilling Lines, Crackers, Cat Lines and Spinning Lines.

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OIL WELL SUPPLY CO., *Distributors*

Stores in All Oil Fields

PLYMOUTH

"the rope you can trust"

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 40)

Moody-Seagraves Producing Co. and Independent Oil & Gas Co.'s No. 1 Welder, 6,280 ft. from S line, 3,150 ft. from E line of Welder tract, Henry Eyles Sur. ..... T. D. 4,705 ft.; drlg.
Cosden Oil Co.'s No. 1 Stoltzfus, 2,310 ft. S and E lines of Sec. 14, Rangley Subd. of C. Miller ranch, Uranga Sur. ..... T. D. 4,500 ft.; shut down.
Humble and Hurlbut et al's No. 1 J. C. Wood, 150 ft. from NW line, 1,144 ft. from SW line of P. T. Irrigation Co. ..... T. D. 5,077 ft.; standing.
The Texas Company's No. 1 McCampbell, 150 ft. from N and E lines of 161-ac. tract, R. Pena Sur. ..... Location.
Simms Oil Co.'s No. 2 Holzmark, 660 ft. N and 20° E of No. 1, T. York Sur. ..... T. D. 4,250 ft.; coring.
Rowan and Hope's No. 1 Goree, 600 ft. S, 300 ft. W Lot 4, T. B. Barton Sur. ..... Derrick.

BEXAR COUNTY

Eckert & Son's No. 3 J. J. Brehm, 545 ft. from N line, 150 ft. from W line of lease, Sur. No. 58 ..... Location.
Gatlin Oil Co.'s No. 2 I. A. Beck, 150 ft. from SE line, 2,551 ft. from SW line of lease, J. Montez Sur. ..... Location.
Kay and Uhl's No. 1 Rhode, C. Texada Sur. No. 133 .... T. D. 600 ft.; waiting on cement
Long and Craig's No. 1 Sandemer ..... Location.
McElroy-Hail and Croach's No. 1 Sweeney, 450 ft. NW line, 700 ft. W line of tract, F. R. Hernandez Sur.... Waiting on cement.
J. M. Russell's No. 1 P. L. Price, 1,500 ft. to N line, 660 ft. W of tract in Angel Navarro Sur. ..... T. D. 932 ft.; show oil.
Snyder, Reeves et al's No. 2 Glasscock, 12 miles NE of San Antonio ..... T. D. 802 ft.; shut down.
Weibacher et al's No. 1 Ernst, 6,400 ft. S line, 900 ft. W line of J. Christopher Sur. ..... T. D. 720 ft.; shut down.
Somerset Syndicate's No. 1 Lagrange, 54 varas from S and W lines of Carrico tract, Sur. No. 48 ..... T. D. 375 ft.; shut down.
J. E. Weatherall and Ben C. Hillman's No. 1 Talley .... Location.
Russell & Moore's No. 2 Mills, 20 ft. S of No. 1, Angel Navarro Sur. ..... T. D. 1,136 ft.; shut down; repairing rig.
Ueckert et al's No. 1 Palfrey, 1,000 ft. S and W lines of farm ..... T. D. 700 ft.; drlg.
S. M. Terrell et al's No. 1 A. Beadon, 1,100 ft. from E line, 12,000 ft. from N line of John Barber Sur.. Location.
F. W. Tong's No. 1 Willie Sandemer, 150 ft. from NE and SE lines of the N 20 acres of Willie Sandemer 400-ac. tract, Juan Montez Sur. ..... T. D. 1,170 ft.; shut down.
Bowman and Waldrop's No. 1 Ridder, 1,000 ft. from S and W lines of 688-ac. tract, J. M. Sur. ..... T. D. 2,000 ft.; plugged back to 600 ft.; will put on pump.

CALDWELL COUNTY

Callihan et al's No. 3 W. H. Callihan, 70 ft. N, 65° E of No. 2 ..... T. D. 2,525 ft.; shut down.
Cargil et al's No. 1 Thomas, 1,505 ft. from E line, 150 ft. from NE cor. of A. W. Jordan tract, J. Alberts Sur. ..... T. D. 1,703 ft.; drlg. in Taylor marl.
Blount and Mills' No. 1 McMahan, 275 ft. from SW line, 75 ft. from SE line of 50-ac. tract, J. Pinchback Sur. ..... T. D. 2,178 ft.; fishing.

COLORADO COUNTY

Lewis Siagel Drilling Co.'s No. 1 Henderson, 990 ft. from W line, 2,310 ft. from S line, Sec. 1, Blk. 57, T.&P. Sur. ..... Location.
A. H. Eaton et al's No. 1 Sarcek, B. Schneider Sur. .... T. D. 709 ft.; drlg.

COMAL COUNTY

Caldwell & Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-ac. tract in the H.E.&W.T. No. 5,894 Sur. ..... T. D. 600 ft.; standing.

DEWITT COUNTY

Penn Oil Co.'s No .1 Junker, C N half 20-ac. tract, Pettus Sur. ..... T. D. 5,490 ft.; shut down.
H. T. Roe's No. 1 Leinhardt ..... T. D. 2,170 ft.; shut down.
Sheldon Petroleum Co.'s No. 1 Goehring, center of Goehring tract, H. Stubblefield Sur. ..... Location.

DUVAL COUNTY

Al Buchanan et al's No. 1 Wood-Welder, 1,500 ft. from W line, 500 ft. from N line of Sec. 215 ..... T. D. 1,526 ft.; set csg.
Gulf Prod. Co.'s No. 1 Shaeffer, J. Martinez Sur. ..... T. D. 450 ft.; drlg.
Vacuum Oil Co.'s No. 1 Duval County Land Co., Sur. 280 ..... T. D. 1,827 ft.; will make drill stem test.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 320 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 ..... T. D. 6,760 ft.; drlg.
James Dalgish's No. 2 Peterson, 850 ft. N line, 1,100 ft. W line of Sec. 82, Blk. E in the H.E.&W.T. Sur... Location.

FALLS COUNTY

Marlin Oil Co.'s No. 1 Hodges ..... T. D. 2,340 ft.; shut down.

FAYETTE COUNTY

Elam & Reynolds' No. 1 Florence, M. Muldom Sur. No. 13 ..... T. D. 310 ft.; drlg.
Kelly et al's No. 1 Burke ..... T. D. 834 ft.; shut down.

FRIO COUNTY

A. H. Wray's No. 1 Burns estate, 700 ft. N, 330 ft. E of C Sec. 123, Antone Hupzor ..... T. D. 3,708 ft.; show oil; will test

GOLIAD COUNTY

A. G. Riemenschneider's No. 1 A. T. Fromme, 275 ft. from N line, 912 ft. W line of 300-ac. tract, P. Dexeter Sur. ..... T. D. 2,330 ft.; shut down.
Gibson Oil Co.'s No. 1 Cyrus Parks, 3,000 ft. S and 2,500 ft. E of NW cor. of Parks ranch, Ferguson Sur. ..... T. D. 5,104 ft.; standing.
T. B. Slick's No. 1 Poetker, 1,500 ft. from SW line, 900 ft. from SE line of 591-ac. tract, Obid Marshall Sur. ..... T. D. 4,213 ft.; shut in for storage.

GONZALES COUNTY

Andibus & Cummings' No. 1 R. D. and J. C. Miller, 523 ft. from S line, 1,000 ft. from E line, Ann Williams Sur. ..... T. D. 2,550 ft.; shut down.
Acme Oil & Royalty Corp.'s No. 1 H. K. Weber, 2,525 ft. from NW line, 2,250 ft. from SW line, Wright Sur. ..... T. D. 2,560 ft.; shut down.
Weal Oil Co.'s No. 1 Martin, 360 ft. SE line and SW line of tract, Thomas Moore Sur. ..... T. D. 1,600 ft.; drlg.
United North & South's No. 2 Wells, 1,250 ft. SW of No. 1 ..... T. D. 3,000 ft.; drlg.

GUADALUPE COUNTY

Ray Oil Co.'s No. 1 R. Felsing, 300 ft. NW line, 450 ft. NE line 120-ac. tract in the M. Baker Sur. ..... T. D. 900 ft.; shut down.
O. K. Emerson's No. 1 C. A. Phillips, center of 80-ac. tract, Velda Sur. ..... Rigging up.
Jones and Erwin's No. 1 O. Forrester, 2,700 ft. from NE cor., 450 ft. from NW line, O. Forrester tract, Pate Sur. ..... T. D. 707 ft.; shut down.
Jones and Erwin's No. 1 Hoese, 150 ft. each way out of NE cor. of 200-ac. tract, J. Leal Sur. ..... T. D. 691 ft.; shut down in Edwards.

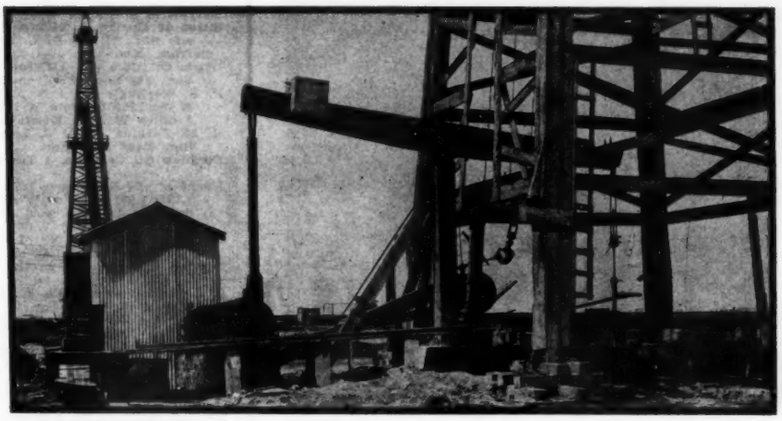
HAYS COUNTY

Halley & Whittington's No. 1 Heidenrich, 4,900 ft. from NW line, 400 ft. from NE line of farm, Hemphill Sur. ..... T. D. 2,027 ft.; drlg.
San Marcos Oil & Gas Co.'s No. 1 A. H. Alford ..... T. D. 513 ft.; waiting on cement.

JIM HOGG COUNTY

Cole Petroleum Co.'s No. 1 Allen, 150 ft. from W line, 336 ft. from N line, Blk. 7, Sur. No. 23 ..... T. D. 3,170 ft.; sand; show oil.

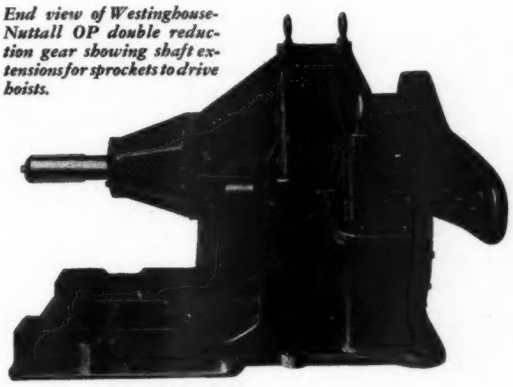
One of the hundreds of producing wells pumped and serviced by electric drives which include Westinghouse-Nuttall OP double reduction gears.



OP DOUBLE REDUCTION GEARS *for two-speed motor pumping*

FOR efficiently pumping and servicing producing wells with the same drive equipment, two-speed motor power has outstanding advantages among which are: low initial cost; quicker servicing; minimum fire hazard; reduced space requirements; ease of starting, particularly in cold weather; and low upkeep.

End view of Westinghouse-Nuttall OP double reduction gear showing shaft extensions for sprockets to drive hoists.



Additional production advantages can be obtained with electric power if these motors are used with Westinghouse-Nuttall OP double reduction gears. Then no bandwheel, belts, or chains are required. Installation is simplified. Forty per cent greater overall pumping efficiency is obtained and maintenance is reduced to occasional lubrication.

These double reduction pumping gears are made in three sizes covering the entire range of ratings of existing two-speed pumping motors—15/35 to 35/75 horsepower—and are designed not only for pumping duty, but also for all other well operations, such as bailing, swabbing, fishing, and even re-drilling.

In all units, an exclusive "change gear" feature permits varying the number of pumping strokes without affecting the motor speed.

Inquire about these units at any branch of the Oil Well Supply Company or Westinghouse office.

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PITTSBURGH DES MOINES

Four 2625-barrel PDM storage tanks each measuring 25 feet by 30 feet with welded cone roofs erected at Cushing for the Deep Rock Refining Company. In the background are 5,000 and 10,000-barrel tanks also included in this job.

Steel Storage Tanks and Oil Refinery Equipment

A total of forty-two PDM storage tanks of various capacities up to 10,000 barrels were recently erected by our field erection crews at Cushing, Oklahoma, for the Deep Rock Refining Company, after fabrication in our Des Moines plant. These two views show some of the completed tanks.

An eastern fabricating plant at Pittsburgh and a third of a century's experience in supplying equipment to oil fields and refineries further augment Pittsburgh-Des Moines service.

Sixteen 1120-barrel PDM storage tanks each measuring 20 feet diameter by 20 feet high with welded cone roof construction just completed for the Deep Rock Refining Company at Cushing, Okla.

Standard sizes and types of PDM storage tanks can often be supplied direct from the eastern or western stocks of our two plants. Send us your detailed specifications, and we will submit quotation and quickest shipment available from either plant.

PDM TANKS PITTSBURGH

Pittsburgh-Des Moines Steel Co.

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New York San Francisco Seattle Chicago Atlanta

J. D. Pulliam's No. 1 Jones, 1,020 ft. W line, 1,020 ft. S line, Share 5-A Hinojosa Sur. ....T. D. 2,846 ft.; drlg.
P. H. Wilson's No. 1 Edds, Sur. 210 ....T. D. 1,300 ft.; shut down.

JIM WELLS COUNTY

Prairie Lea Prod. Co.'s No. 1 Oppenheimer ....Spudded and shut down.

KARNES COUNTY

J. F. Morrissey et al's No. 1 Rigsdale, 660 ft. SW of C of NE line of 170-ac. farm in the McCouli Sur. ....T. D. 2,000 ft.; standing.
J. F. Morrison's No. 1 Cochran, 150 ft. from S line, 500 ft. from E line of tract, D. B. McConnel Sur. ....T. D. 1,010 ft.; drlg.
Hurlbut et al's No. 1 Newberry, 450 ft. SE and SW line of Newberry 428-ac. tract, Carlos Martinez Sur. ....T. D. 2,975 ft.; show gas.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. ....T. D. 1,010 ft.; drlg.
Sitton et al's No. 1 Garvin, C of NE of D. L. Richardson Sur., in the D. L. Richardson Sur., 1 mile NE from Kendalia ....T. D. 1,130 ft.; drlg.
Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale ....T. D. 2,410 ft.; drlg. lime.
P. B. Sterling's No. 1 R. J. McCrocklin, 1,350 ft. from N line, 250 ft. from W line of the B. G. Owens Sur., 4 miles W from Kendalia ....T. D. 1,600 ft.; shut down.
R. M. Perkins' No. 1 J. Lawhorn, Sec. 10, 2,475 ft. E line, 1,488 ft. S line ....T. D. 705 ft.; drlg.
Permian Oil Co.'s No. 1 Taylor, Sec. 18, G.B.&G. Sur. ....Location.

KERR COUNTY

Evans et al's No. 1 Love Ranch, 100 ft. from S line Sur. 1,597, 1,000 ft. E of W line of J. Martinez No. 1,594 Sur. ....T. D. 3,374 ft.; will put on pump.

KINNEY COUNTY

Magnolia Pet. Co.'s No. 1 Whitehead-Wardlaw, 2,640 ft. W line and S line of Melton Valdez grant ....T. D. 4,745 ft.; drlg.
Mardon Oil Co.'s No. 2 Jim Clamp ....T. D. 1,389 ft.; standing.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur. ....T. D. 850 ft.; standing.
Kamon et al's No. 1 Hodges ....T. D. 1,600 ft.; drlg.

LASALLE COUNTY

Fred W. Vais' No. 1 Coleman, 200 ft. from S and E lines of SW Sec. 514, B.S.&F. Sur. ....T. D. 40 ft.; standing.

LAVACA COUNTY

Cranfill & Reynolds' No. 1 Hermes, William Ryan Sur. ....Moving in rig.
Newton Oil Co.'s No. 1 Reeves, cor. of S line of Reeves tract, John Huesser Sur. ....T. D. 3,340 ft.; shut down.

LIVE OAK COUNTY

Jacob, Buzzini & Pickett, Inc.'s No. 1 C. E. Kay in the Bridget Fadden Sur., 3 miles E from George West..T. D. 2,225 ft.; drlg.
Houston Oil Co.'s No. 3 Dunning, 330 ft. from NE line and 2,800 ft. from SE line of tract, M. B. Kilvin Sur...Moving in derrick.
Houston Oil Co.'s No. 1 D. W. Snyder, 630 ft. from S line, 150 ft. from E line of Snyder tract, T. E. Garner Sur. ....T. D. 5,386 ft.; coring.
Illinois Exploration Synd.'s No. 1 Reeves-Brown, 1,300 ft. S of Seltars tract, 1,800 ft. E of Ry. ....T. D. 401 ft.; drlg.
Sid Keoughan's No. 1 C. E. Terrell, 6,000 ft. from N line, 1,000 ft. from E line, Dan O'Boyle Sur. ....T. D. 3,840 ft.; shut down.
Tul-Tex Oil Co.'s No. 1 L. Jacobs, 4 miles from N of Callihan Field ....T. D. 4,365 ft.; drlg.

LEE COUNTY

Burt et al's (M. D. Rickett) No. 1 R. C. Sanders ....T. D. 3,124 ft.; shut down.
Marts et al's No. 1 Thomas ....T. D. 2,165 ft.; drlg.
A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. ....T. D. 1,987 ft.; drlg.

McLENNAN COUNTY

C. E. Groone et al's No. 1 League ....T. D. 932 ft.; shut down.
W. L. Murrel et al's No. 1 Hixon ....T. D. 775 ft.; shut down.

McMULLEN COUNTY

Mogul Pet. Co.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur. ....T. D. 632 ft.; standing.
Sheree, Brodie and Emick's No. 1 Shiner, Henry Brewer Sur. ....T. D. 500 ft.; drlg.; show gas 374-79 ft.

MAVERICK COUNTY

Rycade Oil Corp.'s No. 6 Chittim, 1,445 ft. from S, 320 ft. from W of Sec. 7, I.&G.N. Sur. ....T. D. 3,715 ft.; show oil and gas; will set csg. and test.
Rycade Oil Corp.'s No. 5 Sullivan, in C of Sec. 82, Blk. 7, in the I.&G.N. Sur. ....T. D. 7,385 ft.; drlg.
Texas Gas Utilities Co.'s No. 7 Chittim, 5.70° E, 1,845 ft. from No. 3, I.&G.N. Sur. ....T. D. 2,050 ft.; drlg.

MEDINA COUNTY

National Oil Co.'s No. 1 Howard, 1,750 ft. E of W line, 1,554 ft. N of S line of survey in the John George Sur. No. 9, 10 miles S of Dunlay ....T. D. 2,281 ft.; coring.
C. H. Florian et al's No. 1 Henry Meyer ....T. D. 200 ft.; drlg.
Caldwell et al's No. 1 L. W. Burrell ....T. D. 518 ft.; standing.
Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of survey, 487.6 miles W of Devine....T. D. 2,789 ft.; shut down.
United North & South's No. 2 Little ....T. D. 1,600 ft.; show oil; running csg.

MILAM COUNTY

Rheubotham & Tate's No. 1 Johnson, 325 ft. from N line, 250 ft. from W line of 40-ac. tract, D. Robinson Sur. ....T. D. 1,475 ft.; shut down.
Kyser, Roberts & Dibble's No. 2 Ward ....T. D. 2,600 ft.; drlg.
Lloyd Oil Corp. and H. W. Elliott's No. 1 Davis ....T. D. 1,300 ft.; standing.
J. E. McKee et al's No. 1 Littleton, 150 ft. from N and 225 ft. from W lines of lease, C. Chevallier Sur. ....T. D. 100 ft.; shut down.
G. I. Moore's No. 1 Davis ....T. D. 2,147 ft.; drlg.
Peggie Bros.' No. 1 M. Reed ....T. D. 650 ft.; shut down.
Service Oil & Gas Co.'s No. 1 H. G. Hensley, 500 ft. from NW line, 400 ft. from NE line of 50-ac. tract, Valdez Sur. ....T. D. 2,180 ft.; standing.

NUECES COUNTY

Grimm et al's No. 1 William Baur ....T. D. 486 ft.; drlg.
Calallen Oil & Gas Co.'s No. 2 Allen, 800 ft. from E line, 1,100 ft. from S line, Blk. 76, Garias Sur. ....T. D. 1,975 ft.; shut down.
H. H. Weinert's No. 1 Mohle, 450 ft. from S line, 450 ft. from W line, Sec. 94, Bishop Subd., Palo Alto lands ....T. D. 452 ft.; set casing.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW Sec. 175 ....T. D. 400 ft.; setting 15½-in. csg.

STARR COUNTY

Los Olmos Oil Co.'s No. 2 Kelsey-Bass, Blk. 6, Porcion 77 ....T. D. 269 ft.; standing.
Kush and Duerkson's No. 1 Kelsey-Bass, Blk. 9, Porcion 75, Carmargo Sur. ....Drlg. 670 ft.
Menyard et al's No. 1 Scalbury, 150 ft. from E line, 6,550 ft. from N line, Share 5, Porcion 75, Jurisdiction of Carmargo ....T. D. 349 ft.; set 8-in. csg.

SAN PATRICIO COUNTY

George B. Pickett's No. 1 Baldwin, 900 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Neill Sur., Abstract 211 ....T. D. 4,020 ft.; shut down.
Cosden Oil Co.'s No. 1 Ramsey, 3,000 ft. from N line, 4,500 ft. from E line, Portillo Sur. ....T. D. 3,164 ft.; cleaning out.
Union Prod. Co.'s No. 4 Welder, 3,000 ft. N line, 4,500 ft. E line of tract in the E. Portillo Sur. ....T. D. 5,893 ft.; standing.
Cosden Oil Co.'s No. 1 Powell, 330 ft. E line of 36-ac. tract in Sec. 32, Paul Subd., Coleman-Fulton Pasture Lands ....T. D. 4,532 ft.; standing.
Saxet Oil Co.'s No. 1 Carrol, 8 miles N of Gregory ....Derrick.

TRAVIS COUNTY

Fort Bend Oil Co.'s No. 1 Engleman, 450 ft. N line, 150 ft. W line of 108-ac. tract, J. H. Denson Sur. ....T. D. 385 ft.; shut down.
E. R. Marts' No. 1 Voelker, 150 ft. N line, 150 ft. W line of tract, L. Kimbro Sur. ....T. D. 1,002 ft.; drlg. plug.
Allen et al's No. 1 Sophie Smith ....T. D. 701 ft.; show oil.

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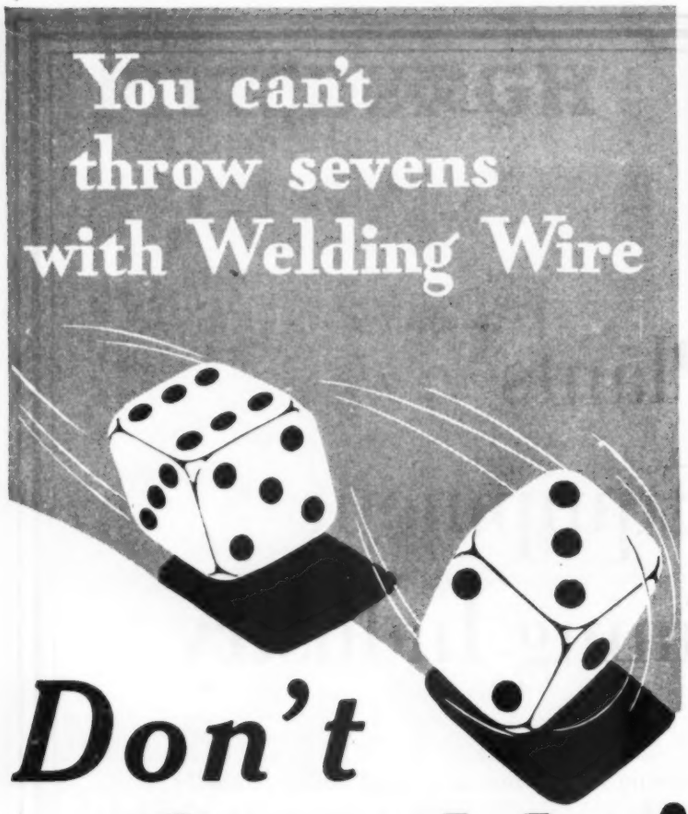

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UVALDE COUNTY

Phantom Oil Co.'s No. 1 Claudt, Sec. 611 ..... T. D. 2,710 ft.; shut down.
Waldrop & Welch's No. 1 E. R. Edmonds, 1,750 ft. NW, 7,200 ft. W of Sec. 71, in the A. Gomez Sur., 8 miles S of Uvalde ..... T. D. 1,610 ft.; running csg.

VICTORIA COUNTY

Newton et al's No. 1 West ..... T. D. 1,550 ft.; standing.

WEBB COUNTY

Usher Carson et al's No. 3 Benavides, 150 ft. from S and W lines of Blk. 7, Sur. 1,613 ..... T. D. 500 ft.; drlg.
O. W. Killam's No. 1 Bruni, 2,490 ft. from E line, 1,170 ft. from S line of Sur. No. 77 ..... T. D. 2,637 ft.; drlg.

WILSON COUNTY

Rycade Oil Corp. and Getty Petroleum Co.'s No. 1 J. A. Johnson, 150 ft. from N line, 600 ft. E of railroad tract, Jose de Balmaseda Sur. ..... T. D. 800 ft.; drlg.
Stover and Wren's No. 1 John Reuss, 10,400 ft. from SW line, 2,300 ft. from NW line, O. A. Trevino Sur. No. 19 ..... T. D. 600 ft.; drlg.

ZAPATA COUNTY

T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Partition No. 6, T. Uribe Partition of Jose V. Borrego Sur. ..... Rigging up.
John Poppas Pool, Inc.'s No. 1 Flores, 2,977 ft. SE line, 6,000 ft. Rio Grande River, Porcion 35 ..... Rigged up.
B. F. Nixon's No. 1 A. Guiterrez, 170 ft. S line, 332 ft. E line, Lot 5, Blk. 8, Partition 10, Borrego grant.... T. D. 50 ft.; standing.
O. W. Killam's No. 2 Slator, Borrego grant ..... T. D. 2,135 ft.; fishing.
Penny Prod. Co.'s No. 1 Juan V. Cuellar, Jr., et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2 ..... T. D. 1,860 ft.; drlg.
William Marks' No. 1 Flores, Blk. 36, Porcion 37 ..... T. D. 1,214 ft.; drlg.
National Oil Co. of Delaware's No. 1 Luther, 617 ft. NW line, 96 ft. NE line, Blk. 97, Da Prom Subd., Porcion 6 ..... T. D. 380 ft.; standing.
National Oil Co.'s No. 2 Adams, 150 ft. from NW line and SW line, Blk. 11, Borrego grant ..... Location.
Mackenzie and Tallmadge's No. 1 Trevino, 400 ft. SE line, 200 ft. NE line, Blk. 6, Sur. No. 4, Porcion 2 and 3 ..... T. D. 300 ft.; standing.
F. M. Blair & Son's No. 1 Guiterrez, 150 ft. from NW line, 660 ft. from SW line, Blk. 2, Blair Subd., Comitas grant ..... T. D. 1,750 ft.; standing.
Lincoln Oil & Gas Co.'s No. 1 Guiterrez, Blk. 23, Subd., La Huerta grant ..... T. D. 1,430 ft.; fishing.

ZAVALA COUNTY

Carl Cromwell's No. 1 Whitecotton, C of NW Sec. 1, A.P.&M. Sur. ..... Location.
F. W. Weigand's No. 1 Gates, 1,320 ft. from N line, 220 ft. from NE cor., Sur. No. 13 ..... T. D. 3,215 ft.; shut down.

YATES VACANCY SUIT TO CORRECT ERRORS

AUSTIN, Tex., Jan. 3.—A judicial determination of land boundaries in the Yates oil fields of Pecos County, involving the rights of the State and of 210 private individuals and corporations, has been asked by the attorney general in a suit filed in district court here.

Although James V. Allred, attorney general-elect, will inherit the suit, it was filed this late in the administration of Attorney General Robert Lee Bobbitt in the nature of a reply to a recent suit filed in Federal court at El Paso, to which the State was not made a party.

The fact that in the suit filed at El Paso that private individuals sought to obtain valuable oil lands regarded as school lands, made the filing of the suit at this time imperative, Mr. Bobbitt said. Assistant Attorney General W. W. Caves filed the petition, after months of preparation.

The State's plea sought to establish boundaries; to determine vacancies and to recover royalties for the State if it should be found any were due it.

The following statement has been made in behalf of the attorney general's department.

"The suit filed by the attorney general in behalf of the State against R. B. Whiteside and others is not primarily a suit to recover vacant land claimed to belong to the State. It is primarily for the purpose, as stated in the petition filed, of clarifying a boundary situation existing in the Yates oil field in Pecos County, and to settle claimed vacancies in that vicinity, that have created a confused condition which renders it impossible to determine otherwise the relative rights of the State and the landowners concerning some of the oil that has been and is being produced. This confusion arises principally from the fact that most of the surveys of land involved were never in fact run out on the ground, but were merely platted in from certain maps and data that have since been found to be erroneous. This has given rise to much contention and considerable litigation concerning the location of land lines and corners upon the ground.

"The filing of this suit at this time also seemed imperative because a suit recently was brought and is now pending in the Federal court at El Paso in which it is sought, according to the petition filed, to move certain privately owned sections from which oil is not being produced about a mile northward and about a mile eastward from where they have always been supposed to be, and where the State claims them to be, and locate them upon the most highly productive area in the Yates Field on land in which the minerals are claimed by the State to be reserved to the State and from which thousands of dollars have been paid into the state permanent school fund. If a judgment to that effect should be rendered in that case, and should be binding on the State, the state permanent school fund would suffer an incalculable loss.

"Thousands of dollars which seem to belong to the permanent school fund as proceeds from oil produced on what appears to be school lands are now being held in suspense awaiting a determination of whether the wells from which the oil came are on such lands or are on privately owned lands. Other royalties in large sums are being withheld because of the uncertainty to whom they belong. Such a situation could not have been cleared up otherwise than by a suit by the State, since the State is a necessary party and may not be sued without its consent, which consent could only be given by the Legislature.

"The suit, therefore, is not alone in the interests of the State but will inure immeasurably to the benefit of all who are interested in the production of oil in this field. The primary purpose of the suit, therefore, is to fix and to mark upon the ground with definiteness and certainty the lines and corners of the original grants of land in this field according to their field note calls as construed by the court, but incidentally, of course, to recover such lands, if any, as are not included in such grants when and so located. The grants of land involved aggregate about 40,000 acres of land constituting the whole of the Yates oil fields, from which fields more than $100,000,000 worth of oil has already been produced."

A. M. McDEARMOTT DIES

LOS ANGELES, Calif., Jan. 3.—Andrew M. McDearmott, 65 years of age, retired capitalist and former Oklahoma oil man, died at his home in Pasadena last week. Mr. McDearmott came to California 10 years ago from Kansas City.

GLENN IRWIN DIES

Glenn Irwin of Eldred, Pa., died in a hospital at Iraan, Tex., December 30, of injuries sustained when he fell into a moving belt on a wildcat test in Crockett County. Irwin was tool dresser on the well.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 49)

Cranfill & Reynolds' No. 3 Willingham, 330 ft. from S and E of Sec. 307, B.B.B.&C. Sur. ....Shut down 3,090 ft.

Roeser & Pendleton's No. 1 Littleton, 1,600 ft. from S and 660 ft. from W of SE Sec. 191, B.B.B.&C. Sur. ....Drlg. 950 ft.

Roeser & Pendleton's No. 1 Gribble (Russell), 660 ft. from S and 440 ft. from W of NW Sec. 210, B.B.B. &C. Sur. ....Rig on ground (cable tools).

The Texas Company's No. 2-A Stephens, 330 ft. from S and E, Sec. 79, Blk. 1, H.&T.C. Sur. ....Shut down 3,182 ft.; cem. 8-in. casing and cored to 3,195 ft.

The Texas Company's No. 1-B Teagraden, 1,900 ft. from S and 440 ft. from E, Sec. 8, W. F. Richardson Sur....Drlg. 2,985 ft.

GAINES COUNTY

Texas Consolidated Oil Co. et al's No. 1 Jones, 2,310 ft. from NE, Sec. 4, Blk. A-8, P.S.L. Sur. ....Drlg. 400 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 4, H.&G.N. Sur. ....Spudded and shut down.

Perry & Porsey's No. 1 Justice, 1,980 ft. from S and 1,680 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ....Location.

GLASSCOCK COUNTY

F. H. E. Oil Co.'s No. 1 Meek, 1,650 ft. N and E parallel to section lines of SW cor., Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur. ....Tested salt water; will drill deeper to 3,150 ft.; total depth 2,970 ft.

Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor., Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur...Total depth 2,956 ft.; shut down.

World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor., Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur....Shut down 660 ft.

HOWARD COUNTY

Cosden Oil Co.'s No. 6-A Roberts, 200 ft. N and E of Sw cor., Sec. 129, Blk. 29, W.&N.W. Sur. ....Sulphur water 1,433-46 ft.; shut down 1,456 ft.

G. F. Getty's No. 1 Snyder, Sec. 27, Blk. 10, Twp. 1s, SW cor. NE NE ....Shut down 3,500 ft.

Group No. 1 Oil Corp.'s No. 2 Eason, 1,320 ft. from S and W Sec. 6, Blk. 32, Twp. 2s, T.&P. Sur. ....Spudding.

Magnolia Pet. Co.'s No. 1 Kelly Roberts, 330 ft. S and E, Sec. 112, Blk. 29, W.&N.W. Sur. ....Running 10-in. casing 1,306 ft.

Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ....Shut down 261 ft.

HUDSPETH COUNTY

Theison's No. 1 University, 3,050 ft. from S and 2,225 ft. from E of Sec. 17, Blk. E ....Spudded 35 ft. and shut down.

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW, Sec. 12, Blk. 18 ....Shut down 3,155 ft.

IRION COUNTY

Central Oil Co.'s No. 2 Horney, 150 ft. from N and 1,320 ft. from E, Sec. 3, Blk. 3, H.&T.C. Sur. ....Shut down 1,239 ft.

Cromwell et al's No. 3 Tankersley, 150 ft. from N and 210 ft. from W of E half Sec. 1,320, G.C.&S.F. Sur....Shut down 1,712 ft.; show oil 1,621-25 ft.

Dixie Oil Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ....Drlg. 225 ft.

Straughn & Texannati Oil Co.'s No. 1 Tankersley, 150 ft. from S and 750 ft. from W of Sec. 4, Gonzales County School Land ....Shut down 1,473 ft.

Williams & Williams' No. 1 Noelke, 300 ft. from N and 1,020 ft. from E, Sec. 3, City of San Antonio Sur.....Shut down 3,401 ft.

F. F. Webb's No. 1 W. H. Williams, 200 ft. from E and 750 ft. from S line, SW NE, Sec. 10, Gonzales County School Land ....Shut down 100 ft

JONES COUNTY

Bond & Trout's No. 1 Williams, 330 ft. from N and W of most northerly NW cor. of Sec. 12, Blk. 19, T.&P. Sur. ....Spudding (cable tools).

McBest et al's No. 1 Roberts ....Total depth 1,000 ft.

Jameson et al's No. 1 King, 4,681 ft. from S and 150 ft. from E of M. Bueno Sur. No. 196 ....Drlg. 275 ft.

Shaheen & Duffy's No. 1 King, 2,650 ft. from N and from N and W, Lot 5, M. Bueno Sur. No. 197 ....Shut down 1,500 ft.

Union Oil Co. of Nevada et al's No. 1 Hedrick, 200 ft. from N and W of 91.4-acre farm in G. Martinez Sur., Abst. 262, Sub. 5 ....Oil sand 1,960-71 ft.; total depth 1,971 ft.; swabbed 85 b.i.s. first 24 hrs., gravity 36.0, and 92 bbls. second 24 hrs.; put on pump.

Union Oil Co. of Nevada & Shaheen's No. 1 King, 200 ft. from N and W, Lot 5, M. Bueo Sur. No. 197 ....Moving in material.

S. C. Yingling et al's No. 1 Cade, 330 ft. from N and W from SE cor. NW, Sec. 17, Blk. 19, T.P. Sur. ....Mudding 8½-in. casing 2,306 ft.

LOVING COUNTY

Cromwell et al's No. 1 Russell et al, 2,310 ft. from NE and 330 ft. from NW, Sec. 80, Blk. 1, W.&N.W. Sur....Drlg. 2,000 ft.

Douglas et al's No. 1 Wheat & Ramsey, 330 ft. from SE and 2,310 ft. from SW, Sec. 83, Blk. 1, W.&N.W. Sur...Rig.

Eppenauer et al's No. 2 Allen, 2,310 ft. from NE and 330 ft. from NW Sec. 90, Blk. 1, W.&N.W. Sur. ....Cellar.

Henshaw et al's No. 2 Reagan & McElvain, 1,650 ft. from SW and 990 ft. from SE, Sec. 84, Blk. 7, W.&N.W. Sur. ....Rig.

Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ....Shut down 3,383 ft.

Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. ....Drlg. 2,705 ft.

Lockhart's No. 1 Hubbard, 6,930 ft. from NE and 330 ft. from SE, Sec. 83, Blk. 33, H.&T.C. Sur. ....Rig up and shut down.

Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 33, H.&T.C. Sur. ....Rigged up and shut down.

Martin et al's No. 1 Wheat, 2,310 ft. from NE and 330 ft. from NW, Sec. 73, Blk. 1, W.&N.W. Sur. ....Location.

Miller et al's No. 1 Chapman, 225 ft. from NW and 285 ft. from SW line, Sec. 71, W.&N.W. Sur. ....Top pay ..,356 ft.; well flowed est. 200 bbls. oil on Dec. 29, 1930.

Rush et al's No. 1 Wheat, 330 ft. from NW and SW, Sec. 77, Blk. 1, W.&N.W. Sur. ....Cellar.

Slagel Drlg. Co.'s No. 1 Cartwright et al, 2,310 ft. from S and 990 ft. from W, Sec. 1, Blk. 57, Twp. 1, T.&P. Sur. ....Running 13-in. casing 382 ft.

California Co.'s No. 6 Reagan & McElvain, 330 ft. from SW and 1,650 ft. from SE, Sec. 84, Blk. 1, W.&N.W. Sur. ....Casing cem. at 4,069 ft.; total depth 4,073 ft.

California Co.'s No. 7 Reagan & McElvain, 2,032 ft. from SE and 1,014 ft. from NE of Sec. 84, Blk. 1, W.& N.W. Sur. ....Drlg. 1,110 ft.

MENARD COUNTY

Barnett et al's No. 3 Callan City Co., 330 ft. from S and W, Sec. 1, B.S.&F. Sur. ....Shut down 1,943 ft.

Barnett et al's No. 4 Callan City Co., 1,200 ft. from S and 2,200 ft. from W, Sec. 1, B.S.&F. Sur. ....Machine.

Priest's No. 1 Sorrell, 1,000 ft. from E and 200 ft. from S cor., Sec. 132, E.L.R.R. Sur. ....Shut down 2,521 ft.

MITCHELL COUNTY

Lewis & Slagel's No. 1 Bell ....Shut down 2,827 ft.; bails 20 bbls. oil in 24 hrs.

Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. Sur. ....Shut down 2,112 ft.; top pay 2,038-75 ft.; shot 270 qts. 2,020-92 ft.; swabbed 40 bbls. in 24 hrs.

Morrison et al's No. 1 Poe et al, 660 ft. S and 1,980 ft. W, parallel to section lines of NE cor., Sec. 8, Blk. 27, T.&P. Sur. ....Spudded 10 ft. and shut down.

PECOS COUNTY

Bell et al's No. 1 Eaton, 2,310 ft. from ... and 990 ft. from SE, Sec. 33, Blk. 3, H.&T.C. Sur. ....Drlg. 1,595 ft.

Bell et al's No. 1 Schraff & Blackman, 2,310 ft. NE and 330 ft. NW of E cor., Sec. 37, Blk. 3, H.&T.C. Sur. ....Shut down 1,624 ft.; top pay 1,600 ft.; shot 50 qts.; hole filled up 350 ft. oil in 12 hrs.

Bell et al's No. 1 Eaton (Sun Oil Co.), 2,310 ft. from NE and SE, Sec. 35, Blk. 3, H.&T.C. Sur. ....Drilling 300 ft.

Culberson Bros.' No. 1 Tippett (Humble), 150 ft. S and 843 ft. E of C Sec. 40, Blk. 194, G.C.&S.F. Sur. ....Location.

Culberson Bros.' No. 2 Tippett (Humble), 150 ft. S and E of C Sec. 40, Blk. 194, G.C.&S.F. Sur. ....Top pay 420 ft.; 150 ft. oil in hole; drlg. 495 ft.

Dittman's No. 1 Jackson, 2,310 ft. from NE and 330 ft. from NW, Sec. 28, Blk. 3, H.&T.C. Sur. ....Moving in machine.

Dittman's No. 2 Eaton, 990 ft. from SW and 330 ft. from SE, Sec. 35, Blk. 2, H.&T.C. Sur. ....Location.

Dittman's No. 1 Eaton, 330 ft. from NE and SE, Sec. 37, Blk. 3, H.&T.C. Sur. ....Drlg. 1,242 ft.

Humble Oil & Ref. Co.'s No. 1 Kokernot, 1,320 ft. from N line and 1,467 ft. from W line of Sec. 227, Blk. 10, G.H.&S.A. Sur. ....Shut down 6,170 ft

Mann's No. 1 Schraff & Blackman, 3,000 ft. from SW and 990 ft. from SE, Sec. 32, Blk. 3, H.T.C. Sur. ....Drlg. 950 ft.

McCurdy & Brown's No. 2 Tippett, 150 ft. from N and W of SE, Sec. 40, Blk. 104, G.C.&S.F. Sur. ....Location.

McCarty Oil Co.'s No. 3 Gray, 700 ft. from N and 2,260 ft. from W, Sec. 591, G.C.&S.F. Sur. ....Bailed 4 bbls. oil per day; total depth 1,437 ft

Messenger et al's No. 1 Butz, 1,830 ft. from NW and 1,170 ft. from SW, Sec. 54, Blk. 10, H.&G.N. Sur. ....Shut down 1,299 ft.

Mid-Kansas O. & G. Co. et al's No. 1-A Sellman, 250 ft. from S and 330 ft. from W, Sec. 12, Blk. 194, G.C. &S.F. Sur. ....Drlg. 815 ft.

J. R. Miller et al's No. 1 Bennett, 359 ft. W of CWL, Sec. 1, Blk. 119, G.C.&S.F. Sur. ....Drlg. 1,730 ft.

J. D. O'Mara's No. 1 Bennett, Sec. 593, 1,460 ft. from S 150 ft. from E, G.C.&S.F. Sur. ....Total depth 1,236 ft.; top pay 1,089 ft.; plugged back to 1,185 ft.; will drill deeper.

J. D. O'Mara's No. 1 Streety, S of Sec. 1, W. P. Howard Sur. ....Shut down 2,219 ft.; fishing.

Penn Oil Co. et al's No. 1 Alvis, 2,358 ft. from S and 1,327 ft. from W, Sec. 155, Blk. 3, T.&P. Sur. ....Drlg. 370 ft.

Perren Oil Co.'s No. 2 Eaton, C of E, Sec. 27, Blk. 3, H.&T.C. Sur. ....Shut down 1,765 ft.

R. W. Porpus et al's No. 1 State Land, 330 ft. S and W lines of NE, Sec. 28, Blk. OW, T.C. Sur. ....Spudded and shut down.

Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 203, Blk. 3, T.&P. Sur. ....Shut down 5,000 ft.

Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. ....Shut down 500 ft.

Side & Side's No. 1 Blackstone & Slaughter, C NW, Sec. 34, Blk. A-2, T.C. Sur. ....Shut down 3,405 ft.

Schilling & Slaughter's No. 1 Yates, 1,580 ft. N and 150 ft. E of NW cor. Runnels County School Land, but located in Sec. 70, Blk. 1, I.&G.N. Sur. ....Shut down 337 ft.

Southern Crude Oil Pur. Co.'s No. 1 Schraff & Blackman, 4,550 ft. 40° E and 330 ft. 50° W of most southerly cor. Sec. 38, Blk. 3, H.&T.C. Sur. ....Drlg. 1,685 ft.

California Co. et al's No. 1 Thomas, 920 ft. from NW and SW, Sec. 31, Blk. 34, H.&T.C. Sur. ....Location.

The Texas Company's No. 1 Wright, 660 ft. S and E of NW cor., Sec. 9, Blk. 131, T.&St.L. Sur. ....Shut down 3,504 ft

Warner's No. 1 Webb, 2,550 ft. from NW and 6,100 ft. from NE of Sec. 311, Abst. 756, C. McGinley Sur. ....Drlg. 2,975 ft.

Williams & Moran's No. 1 Heiner Est., 450 ft. from N and 2,490 ft. from W of Sec. 590, G.C.&S.F. Sur. ....Drlg. 1,465 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 5-C University, 625 ft. from S and 900 ft. from W of Sec. 25, Blk. 9 ....Top pay 8,405 ft.; flowed 718 bbls. first 24 hrs.; shut down 3,718 ft.

Big Lake Oil Co.'s No. 6-C University, 1,120 ft. S and 1,100 ft. from W, Sec. 25, Blk. 9 ....Location.

Slick estate et al's No. 1 August, C SE, Sec. 1,216, G.C.&S.F. Sur. ....Shut down 3,145 ft.

Texon O. & L. Co.'s No. 4-B University, 1,130 ft. from N and W of Sec. 26, Blk. 9 ....Shut down 8,050 ft.

REEVES COUNTY

R. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. Sur. ....Shut down 380 ft.

Riggs & Smith's No. 1 Lee Monroe, 2,190 ft. from NE and 330 ft. from NW line, Sec. 34, Blk. 8, E.&L.N. Sur. ....Shut down 176 ft.

Salsbury & Gregory's No. 1 Young Bell, 1,170 ft. from N and 330 ft. from NW line, Sec. 34, Blk. 7, H.&L.N.....Temporarily abandoned.

Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur....Shut down 4,415 ft.

California Co.'s No. 2 Kloh & Rumsey, 590 ft. from S and 1,520 ft. from E, Sec. 11, Blk. 54, Twp. 4, T.&P. Sur. ....Location.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 419 ....Drlg. 2,175 ft.

SCHLEICHER COUNTY

Delmar Oil Co.'s No. 1 O'Harrow, C NW, Sec. 56, Blk. 1, G.H.&S.A. Sur. ....Shut down 5,700 ft.

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ....Rigging up standard tools.

Teas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. Sec. 37, Blk. K, G.H.&S.A. Sur. ....Shut down 3,960 ft.

Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ....Shut down 750 ft.

George Wilson's No. 1 Page, Sec. 46, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A. Sur. ....Shut down 5,027 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 320 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. ....Pumping 20 bbls. per day for fuel oil; total depth 3,501 ft.

Camp Spring Oil Co.'s No. 1 Strayhorn, 330 ft. from S and 1,980 ft. from W of Sec. 154, Blk. 3, H.&G.N. Sur...Shut down 875 ft.

I. D. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ....Spudded and shut down.

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 276, Blk. 2, H.&T.C. Sur. ....Shut down 4,970 ft.

Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W, Sec. 65, Blk. 3, H.&G.N. Sur. ....Cellar.

Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 155, Blk. 97, H.&T.C. Sur. ....Cleaning out 1,702 ft.

STERLING COUNTY

Beesley et al's No. 1 Foster, 2,940 ft. N and 300 ft. W of SW cor. Sec. 7, Blk. 22, E.&T.C. Sur., but in Sec. 16, Blk. 21, Twp. 4s, T.&P. Sur. ....Running 10-in. casing 540 ft.

TAYLOR COUNTY

Eastland Oil Co. et al's No. 2 Hunter, 3,418 ft. from S and 2,174 ft. from E of William R. Ellis Sur. ....Total depth 2,750 ft.; plugged back to 2,396 ft. to shoot.

John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor., Sec. 46, Lunatic Asylum Land ....Shut down 6,251 ft.

Hucony Oil Co. et al's No. 1 Ritchie, C SE Sec. 10, Blk. A, S.P. Sur. ....Underreaming 6¾-in. casing 2,765 ft.

Sanger et al's No. 1 City of Abilene, 330 ft. from S and 1,400 ft. from E of Sec. 66, Blind Asylum Land ..... Drlg. 2,000 ft.
Sanger O. & R. Co.'s No. 1 Osborn, 330 ft. from SW of SE, Sec. 68, Blind Asylum Land ..... Rigged up and shut down.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW, Sec. 155, Blk. D, M.-K.-T. Sur. ..... Shut down 2,669 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C, Sec. 6, Georgetown Ry. Sur. ..... Shut down 3,150 ft.
Milham Corp. of Texas' No. 1 R. M. Bassett et al, 150 ft. from N line and 2,640 ft. from E and W lines of Sec. 76, Blk. Y, James Bass Sur. ..... Location.
Miller Bros.' No. 1 Allison & Burke, C NW cor., Sec. 10, Blk. 176, T.&P. Sur. ..... Shut down 120 ft.
Mrs. J. B. McPhees' No. 1 Sam Belt, C, Sec. 16, Blk. D-7, E.L. Sur. ..... Shut down 880 ft.; moved off machine.
Transcontinental Oil Co.'s No. 1 Goode, 3,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F. Sur. ... Drlg. 5,411 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW, Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. ..... Shut down 640 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 2,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... Shut down 760 ft.; show oil and gas 725 ft.
Cosden Oil Co.'s No. 1 William Anson, 2,310 ft. S, 330 ft. W of NE cor., Sec. 20, Blk. 24, H.&T.C. Sur. ..... Location.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW, Sec. 1,628, E. H. Dinger Sur. ..... Plugged back to 2,405 ft. to straighten hole, shut down 2,447 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur. ... Cleaning out 1,945 ft.
Phillips Pet. Corp.'s No. 1 Gulden, 1,250 ft. from N and 1,583 ft. W of Sec. 77, James Webb Sur. ..... Shut down 5,010 ft., contract depth; may drill deeper.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 ..... Shut down 200 ft.

UPTON COUNTY

Corsellus et al's No. 1 Shirk (Tidal Oil Co.), 2,317 ft. from W and 418 ft. from S, Sec. 15, Blk. 3, M.-K.-T. .. Drlg. 150 ft.
Duffey et al's No. 3 McClintic, 330 ft. from N and 1,650 ft. from E, Sec. 206, Blk. F, C.C.S.D.&R.G.N.G. ..... Drlg. 1,400 ft.
Humble O. & R. Co.'s No. 1 Damron et al, 330 ft. from N and W, Sec. 192, Blk. F, C.C.S.D.&R.G.N.G. Sur. .... Waiting on cement to set; total depth 2,871 ft.
Humble O. & R. Co.'s No. 15 Ricker, 3,300 ft. from NE and 3,280 ft. from NW Sec. 5, Mary S. Denton Sur. ... Drlg. 1,180 ft.
R. R. Penn & Shell Pet. Corp.'s No. 1 Halamicek, C SE Sec. 93, Blk. D, C.C.S.D.&R.G.N.G. Sur. ..... Underreaming 10-in. casing; total depth 1,286 ft.
T. P. Coal & Oil Co.'s No. 1 King Ranch Oil & Lignite Co., 2,310 ft. from N and 990 ft. from W, Sec. 28, Blk. 2, M.-K.-T. Sur. ..... Drlg. 2,315 ft.
Weekly Oil Corp.'s No. 1 Shirk, 468 ft. from S and 2,317 ft. from E, Sec. 15, Blk. 3, M.-K.-T. Sur. ..... Shut down 2,650 ft.; top pay 2,645 ft.; 125 ft. oil in hole.
Weekley Oil Corp. et al's No. 1 McClintic, 1,650 ft. from N and 330 ft. from E, Sec. 206, Blk. F, C.C.S.D. &R.G.N.G. Sur. ..... Drlg. 2,850 ft.; show gas 2,665 ft.; show oil 2,815 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE, Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,360 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,230 ft. ..... Fishing 6,780 ft.
Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 33, Blk. D-3, E.L. Sur. ..... Shut down 3,035 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE Sec. 47, Blk. Y.. Shut down 4,009 ft.

WARD COUNTY

Empire Gas & Fuel Co.'s No. 1 John Sealy estate, 330 ft. from S and 1,650 ft. W of NE cor., Sec. 5, Blk. F, T.&M.M. Bros. Sur. ..... Fishing for bit; total depth 2,530 ft.
Grand Falls Oil Co.'s No. 1 Blair & Boogher, 500 ft. from SW and 1,160 ft. from NW, Sec. 11, Blk. 5, H.&T.C. Sur. ..... Fishing for tools; total depth 2,-210 ft.
Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW, Sec. 18, Blk. 3, H.&T.C. Sur. ... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-77 ft.; salt water 2,515 ft.; plugged back to 2,477 ft.
Gulf Prod. Co.'s No. 16 O'Brien, 2,310 ft. from S and 990 ft. E, Sec. 16, Blk. F, L.M.&W.B.&A. Sur. ..... Location.
Kugle et al's No. 1 Wallace, 330 ft. from SE and 1,263 ft. from SW, Sec. 19, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,085 ft.
Magnolia Pet. Co.'s No. 1 Sealy (Atlantic), 2,130 ft. from S and 1,650 ft. from E Sec. 45, Blk. F, G.M.M.B.&A. Sur. ..... Spudding 140 ft.
R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C. Sur. ..... Shut down 1,200 ft.
Prairie O. & G. Co.'s No. 1 Hill, 330 ft. from NE and NW, Sec. 30, Blk. B-29, P.S.L. Sur. ..... Location.
Rector Oil Co. et al's No. 1 Boogher, 1,733 ft. from NW and 1,800 ft. from SW, Sec. 11, Blk. 5, H.&T.C. Sur. ... Cleaning out and bailing; show oil 2,150 ft.; est. 125-bbl. well; total depth 2,230 ft.
Rickford & Smith's No. 1 Johnson, 120 ft. NE and 175 ft. SE of N cor., Sec. 7, Blk. 32, H.&T.C. Sur., but located in Sec. 11, Blk. 5, H.&T.C. Sur. ..... Drlg. 822 ft.
Paul Ryan's No. 1 Allen, 1,138 ft. from NW and 3,774 ft. from NE of Sec. 11, Blk. 5, H.&T.C. Sur. ..... Location.
California Co. et al's No. 1 Lanham, 990 ft. from NE and SE, Sec. 35, Blk. 34, H.&T.C. Sur. ..... Building rig.
California Co.'s No. 1 Gordon, 330 ft. from NE and SE, Sec. 6, Blk. 34, H.&T.C. Sur. ..... Location.
T. P. Coal & Oil Co.'s No. 1 James, 330 ft. from SW and SE, Sec. 5, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,120 ft.
Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17 is N and S, 220 ft. S and 1,910 ft. W, Sec. 17, Blk. 5 ..... Standard rig.
Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Fishing 3,780 ft.
California Co.'s No. 1 Allen, 2,310 ft. from NE and 330 ft. from SE, Sec. 30, Blk. 34, H.&T.C. Sur. ..... Preparing to drill ahead 2,450 ft.

WINKLER COUNTY

Magnolia Pet. Co.'s No. 1 Bashara, 1,650 ft. from S and 2,310 ft. from W, Sec. 17, B-3, P.S.L. Sur. ..... Shut down 1,230 ft.
Magnolia Pet. Co.'s No. 1 Walton, 2,310 ft. from N and W Sec. 16, Blk. 77, P.S.L. Sur. ..... Building rig.
A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE, Sec. 4, Blk. B-5, Public School Land ..... Shut down 3,506 ft.
Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor., Sec. 2, Blk. B-5 ..... Shut down 4,639 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 52)

Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur. ..... S.D. 740 ft.
Cree & Hoover's No. 1 Cole, 330 ft. N and W, SW Sec. 105, Blk. 3, I.&G.N. Sur. ..... Drlg. 3,100 ft; 6-in. csg. set at 3,-068 ft.
Danciger O. & R. Co.'s No. 1 Sullivan, 231 ft. N, 224 ft. W, of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur. ..... S.D. 2,553 ft.
Danciger O. & R. Co.'s No. 1 Barrett, 231 ft. S, 330 ft. W, E½ of N 56 ac., Sec. 136, Blk. 3, I.&G.N. Sur. .. Drlg. 2,580 ft.
Danciger O. & R. Co.'s No. 2 Sullivan, 231 ft. N, 334 ft. W of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur. ..... Estimated 6,000,000 ft. gas 2,997-3,065 ft; S.D. 3,169 ft; S.O. 3,-155-69 ft.
Empire G. & F. Co.'s No. 1 Sullivan, 330 ft. NW of E 64 ac. of W 104 ac. of S 264 ac., N½, Sec. 136, Blk. 3, I.&G.N. Sur. ..... 1,000,000 ft. gas 2,775 ft; S.O. 3,-135 ft. and 3,310-12 ft; T.D. 3,-598 ft; P.B. to 3,238 ft. and shot with 220 qts. from 3,202-38 ft; swbng. 12 bbls. per day.
Empire G. & F. Co.'s No. 1 Wall, 990 ft. S and W, NW, Sec. 161, Blk. 3, I.&G.N. Sur. ..... Location.
Empire G. & F. Co.'s No. 1 Ruscoe, 1,320 ft. N, 660 ft. E, W½ SE, Sec. 111, Blk. 3, I.&G.N. Sur. ..... Bldg. rig.
Hurst et al's No. 1 Ayres, 330 ft. S and E, Sec. 76, Blk. 3, I.&G.N. Sur. ..... Rotary rig.
Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-2, H.&G.N. Sur. ..... Fishing tools 2,770 ft. (correction on depth).
Magnolia Pet. Co.'s No. 2 Heitholt, 150 ft. S, 1,156 ft. W, SE, Sec. 152, Blk. 3, I.&G.N. Sur. ..... Set 8-in. csg. 2,300 ft; standardizing.
Magnolia Pet. Co.'s No. 2 Latham, 175 ft. N, 150 ft. E, Sec. 153, Blk. 3, I.&G.N. Sur. ..... 5,000,000 ft. gas 2,770-2,835 ft; drlg. 3,140 ft; S.O. and 2,000,000 ft. gas 3,125-40 ft.
Magnolia Pet. Co.'s No. 1 Eddington, 330 ft. N, 370 ft. E, NE, Sec. 34, Blk. B-2, H.&G.N. Sur. ..... Rigging up.
Magnolia Pet. Co.'s No. 1 Morse, 330 ft. N and W, S½ NE, Sec. 5, Blk. 26, H.&G.N. Sur. ..... Drlg. 1,450 ft.
Magnolia Pet. Co.'s No. 2 Sailor, 330 ft. S and W, E½ NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Bldg. rig.
Mazda Oil Co.'s No. 1 Combs & Worley, 330 ft. S, 150 ft. W, NE, Sec. 35, Blk. 3, I.&G.N. Sur. ..... Set 8-in. csg. and standardizing at 2,406 ft.
Midwest Explin. Co.'s No. 1-B Taylor, 660 ft. N and W, Sec. 7, Blk. H, A. W. Willard Sur. ..... S.O. 2,967-75 ft; drlg. 3,250 ft; S.O. 3,222-25 ft.
Midgray Oil Co.'s No. 1 McCullough, 267 ft. N, 150 ft. E of 246.9 ac. in Sec. 153, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,960 ft.
Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ..... Fishing for bit; T.D. 2,620 ft.
North American O. & G. Co.'s No. 1 Sullivan, 1,320 ft. S and E, Sec. 160, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,200 ft.
Operators Royalty & Prod. Co.'s No. 2 Vanniman, 330 ft. S and W, E½ NE, Sec. 175, Blk. 3, I.&G.N. Sur. .. Rigging up.
Phillips Pet. Co.'s No. 1 Barrett, 330 ft. S, 150 ft. W, W½, N 56 ac., Sec. 1,360, Blk. 3, I.&G.N. Sur. ..... Drlg. 3,405 ft; making 60 bbls. oil per day and 3 bailers wtr. per hr.
Phillips Pet. Co.'s No. 2 Barrett, 130 ft. N, 465 ft. W, Sec. 136, Blk. 3, I.&G.N. Sur. ..... S.D. 3,106 ft.
Prairie O. & G. Co.'s No. 1 Reynolds, 330 ft. S and E, NW, Sec. 84, Blk. 3, I.&G.N. Sur. ..... Estimated 1,900,000 ft. gas 2,590-2,920 ft; S.O. 3,097 ft; T.D. 3,-407 ft; to plug back for gas well.
W. A. Scott's No. 1 Cobb, 330 ft. S, 425 ft. W, N½ SE, Sec. 184, Blk. 3, I.&G.N. Sur. ..... Estimated 4,000,000 ft. gas 2,875 ft; fishing 3,106 ft.
Skelly Oil Co.'s No. 1 Heitholt, 150 ft. N, 3,806 ft. W, Sec. 153, Blk. 3, I.&G.N. Sur. ..... Fishing 2,926 ft.
Smith's No. 1 Morse, 200 ft. S, 330 ft. W, Sec. 6, Blk. 26, H.&G.N. Sur. ..... 3,000,000 ft. gas 2,150-70 ft; S.D. 2,892 ft; 400 ft. oil in hole.
Southern States Gas Co.'s No. 1 Case, 330 ft. N and W, E½, Sec. 181, Blk. B-2, H.&G.N. Sur. ..... Spudded.
Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N½ NE, Sec. 15, Blk. A-9, H.&G.N. Sur. ..... Rig.
Warner Oil Co.'s No. 1 Morse, 330 ft. S and W, N½ NW, Sec. 68, Blk. 25, H.&G.N. Sur. ..... Cellar.

HUTCHINSON COUNTY

Combination O. & G. Co.'s No. 1 Johnson Bros. (Whaley), C SE SW, Sec. 2, Blk. Y-2, T.T.R.R. Sur. .... Drlg. 2,400 ft.
Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E, of N 80 ac., S 160 ac., Sec. 81, Blk. 46, H.&T.C. Sur. .. S.D.
Dixon Creek Oil Co.'s No. 1-F Johnson Bros., 330 ft. N and E of W 67 ac., SW, Sec. 15, Blk. XO3, H.&O.B. Sur. ..... Spudded.
Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E, of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. ..... Rotary rig.
Liner Drlg. Co.'s No. 1-D Johnson Bros., 330 ft. N and E, W½ SW, Sec. 6, Blk. 1, B.&B. Sur. ..... Drlg. 2,300 ft.
Liner et al's No. 1 Johnson Bros., 990 ft. S, 330 ft. E, W½ SE, Sec. 29, Blk. Y, A.&B. Sur. ..... Correction; spudded and S.D.
Midwest Explin. Co.'s No. 1 Barnbell, common cor. of tracts 28, 29, 30 and 31 of G. Martinez Sur., Blk. 2.. Drlg. 720 ft.
Mitchell et al's No. 1 Dunnaway, 330 ft. N, 990 ft. E, Sec. 7, T.T.R.R. Sur. ..... Bldg. rotary rig.
Sinclair O. & G. Co.'s No. 1-A Johnson Bros., 330 ft. N, 430 ft. E, NW, Sec. 32, Blk. Y, A.&B. Sur. ..... Drlg. 2,710 ft.
Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... S.O. 3,065 ft. and 3,108-10 ft; S.D. for pipe line connection 3,110 ft.
Texilvania Oil Co.'s No. 1 Harvey, 330 ft. N and W, SW NW, Sec. 14, Blk. M-21 ..... Rotary rig.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... T.D. 5,003 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft; S.D. 4,-167 ft.

MOORE COUNTY

Cloud & Dana's No. 1 Jones, 330 ft. N and E, SW, Sec. 169, Blk. 3-T, T.&N.O. Sur. ..... Spudded and S.D.
Dana O. & G. Co.'s No. 1 R. Utey, 330 ft. N, 330 ft. E, W½ SE, Sec. 135, T.&N.O. Sur. ..... Rig on ground.
Delmar Oil Co.'s No. 1-A Jones, 330 ft. N, 990 ft. E, NW, Sec. 171, Blk. 3-T, T.&N.O. Sur. ..... Estimated 100,000,000 ft. gas 3,-090 ft; T.P. 3,360 ft; T.D. 3,449 ft; will try to plug off wtr.
Gulf Prod. Co.'s No. 1 Dare, C SE, Sec. 312, Blk. 44, H.&T.C. Sur. ..... S.D. 2,475 ft.
Gulf Prod. Co.'s No. 2 Kilgore, C SE, Sec. 29, Blk. P.Mc., E.L.R.R. Sur. ..... Cellar.
Home Gas Co.'s No. 1 Reeder, 330 ft. N and W, N½ E½ NE, Sec. 191, Blk. 3-T, T.&N.O. Sur. ..... 25,000,000 ft. gas 3,139-3,200 ft; S.D. 3,505 ft.
Morton et al's No. 1 Rupert, 660 ft. N, 330 ft. E, NW, Sec. 191, Blk. 3-T, T.&N.O. Sur. ..... Cellar.
Shamrock O. & G. Co.'s No. 1 Sullivan, 330 ft. S and E, NE, Sec. 139, Blk. 3-T, T.&N.O. Sur. ..... S.D. 2,877 ft.
Sunray Oil Co.'s No. 1 C. R. Jones, 330 ft. E, 330 ft. S, W½ SW, Sec. 164, T.&N.O. Sur. ..... S.D. 3,280 ft.
Sunray Oil Co.'s No. 2 Jones, 330 ft. S, 990 ft. E, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 580 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. ..... Spudded and S.D.

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Chambers et al's No. 1 Herring, CNL, Sec. 29, Blk. S, G.C.&S.F. Sur. ..... S.D. 680 ft.

POTTER COUNTY

Texas Interstate P. L. Co.'s No. 1 Rockwell, C N½ S½, Sec. 102, Blk. 46, H.&T.C. Sur. ..... Drlg. 2,485 ft.

WHEELER COUNTY

Canadian River Gas Co.'s No. 1 Crawford, 1,200 ft. S, 1,174 ft. E, SE cor., Sec. 77, Blk. O-18, but in Sec. 78 ..... Location.

Devore & Robinson's No. 1 Sitter, 2,310 ft. S and E, Sec. 33, Blk. 24, H.&G.N. Sur. ..... Drlg. 1,600 ft.

Wischkamper et al's No. 1 Kiser, 330 ft. N and E, SW, Sec. 33, Blk. 17, H.&G.N. Sur. ..... T.D. 2,634 ft; plugged back to 2,020 ft; to shoot.

Woodley et al's No. 1 Sloss & Admire, 660 ft. N, 330 ft. E, Sec. 47, Blk. 13, H.&G.N. Sur. ..... S.D. 2,245 ft; estimated 25 bbls. oil from lime 2,205-23 ft.

Vollmert's No. 1 Porter, 330 ft. S and E, NE, Sec. 15, Blk. 27, H.&G.N. Sur. ..... S.D.

EAST CENTRAL TEXAS WILDCATS

(Continued from Page 52)

POLK COUNTY

Sunshine Oil Co.'s No. 1 J. A. Collins, 313 ft. from NE, 150 ft. from SE at right angles to line, A. Viesca Sur. ..... Shut down 3,350 ft.

RAINS COUNTY

Everett & Morrison's No. 1 Franklin, 640 ft. from S and E of 75-ac. tract in John Christian Sur., 6 miles SE of Emory ..... Spudded and shut down.

RED RIVER COUNTY

Buffington et al's No. 1 L. H. Moore, 150 ft. from S and 150 ft. from W of 100 acres, Daniel Cornelius Sur. ..... Shut down 1,070 ft.

Droppleman and Bundy's No. 1 J. W. Cunningham, 250 ft. E and 250 ft. S of 180-ac. tract, S. B. Shi Sur. ..... Drlg. 1,800 ft.

Lloyd Oil Co.'s No. 1 R. H. Mace, 150 ft. from N and 150 ft. E of Mace 86-ac. tract, William Cullan Sur. ..... Drlg. 3,340 ft.

RUSK COUNTY

Alford et al's No. 1 W. L. Thrash, 1,103 ft. from N and 420 ft. from E of SE cor. of B. Smith Sur. ..... Derrick.

Anderson et al's No. 1 G. T. Moore, 600 ft. from E along S line of tract, Juan Ximenes Sur. ..... Derrick.

Anderson & Co.'s No. 1 Thompson, 150 ft. from N and 150 ft. from E, M. J. Prue Sur. ..... Location.

Nick Barbare's No. 1 J. T. Brown, 150 ft. from E and 150 ft. from S of N 36-ac. tract, M. J. Prue Sur. ..... Derrick.

Bateman et al's No. 1 Lois Della Crim, 3,088 ft. W along N line of survey of NE cor. and 400 ft. S at right angles to N line of survey, E. G. Sevier Sur. ..... Top sand 3,629½ ft.; flowed 200 bbls. first 20 minutes; 600 bbls. first 40 minutes; steel line measurement 3,642 ft.; shut down.

Burgoyne et al's No. 1 J. A. Alexander, 683 ft. from E and 400 ft. from S, Thomas Jones Sur. ..... Rig up.

Consolidated Oil Co.'s No. 1 Mayfield-Alford, 150 ft. from N and 150 ft. W of 74.57-ac. tract, Juan Ximenes Sur. ..... Rig up.

Capp & Smith's No. 1 J. L. Cochrane, 150 ft. from E and 150 ft. from SE cor. of Cochrane tract, Jacob Rota Sur. ..... Derrick.

E. L. Chapman's No. 1 A. P. Finney, 150 ft. from W of E 20 acres of 102-ac. tract, Isaac G. Parkey Sur. ..... Derrick.

Deep Rock Oil Co.'s No. 1 Mayfield-Alford, 150 ft. from W and 200 ft. of SE cor. of lease, Juan Ximenes Sur. ..... Drlg. 125 ft.

Dan Dillon et al's No. 1 W. H. Frederick (Jake), 150 ft. from E and 150 ft. from S of 50-ac. tract, Juan Ximenes Sur. ..... Derrick.

Frank Foster's No. 1 Alford-Mayfield, 150 ft. N and 410 ft. from W of NE cor. of Ashby 45-ac. tract, J. Ximenes Sur. ..... Rig up.

Foster Oil Co.'s No. 2 Cook, 150 ft. from S and 150 ft. from W, Juan Ximenes Sur. ..... Rig up.

Goodman's No. 1 Oscar Jones, 250 ft. from W and 150 ft. from N of railroad, Brown Sur. ..... Drlg. 2,730 ft.

Haynes Drilling Co.'s No. 1 J. T. Brown, 150 ft. from N and 150 ft. from E of J. T. Brown 76-ac. tract, M. J. Prue Sur. ..... Preparing to spud.

Hunt's No. 2 Bradford, 1,320 ft. from E and 150 ft. from S of Blk. No. 12, Juan Ximenes Sur. ..... Derrick.

H. L. Hunt's No. 1 Claude Ashby, 330 ft. from W and 485 ft. S of NE cor. of Ashby 109.7-ac. tract, J. Ximenes Sur. ..... Drlg. 2,445 ft.

Hunt's No. 2 Ashby, 150 ft. from N and 2,213 ft. from W of 119-ac. tract, Juan Ximenes Sur. ..... Derrick.

Knox et al's No. 1 M. A. Melton, 363 varas N, 140 varas W, Eliz Milton Sur. ..... Derrick.

E. C. Laster's No. 1 Daisy Bradford, 150 ft. from E and 150 ft. from S of Lot 14, Juan Ximenes Sur. ..... Rig up.

Lide et al's No. 1 Calvin Young, 3,015 ft. E and 3,372 ft. S, M. J. Prue Sur. ..... Drlg. 2,425 ft.

Mass et al's No. 1 Matthews, 3,244 ft. from N, 4,356 ft. from E, Delines Cartimas Sur. ..... Shut down 2,338 ft.

A. A. Malone's No. 1 G. T. Moore, 150 ft. from E and 150 ft. from S, Juan Ximenes Sur. ..... Derrick.

Omaria Meredith's No. 1 Robertson, 150 ft. N along W line of George Guthrie Sur. from SE cor. and 150 ft. W of E line of Robertson 29-ac. tract, R. H. Pinney Sur. ..... Derrick (rotary).

George Page's No. 1 William Camp, 150 ft. from S and 650 ft. from W of 5-ac. tract, J. Ximenes Sur. ..... Derrick.

Rusco Oil Co.'s No. 1 Daisy Bradford, 150 ft. from E and 330 ft. from W, Lot 13, Juan Ximenes Sur. ..... Rig up.

Nat Saddler's No. 1 Ed Sparks, 350 ft. from E and 150 ft. from S of survey, L. C. Rugg Sur. ..... Derrick.

Tex-Lloyd Oil Co.'s No. 1 Camp, 150 ft. E and 150 ft. S of 5-ac. tract, Juan Ximenes Sur. ..... Cored sandy shale 3,551 ft.; little oil.

United Prod. Oil Co.'s No. 1 Mayfield-Alford, 150 ft. from S and 2,233 ft. from W of 105-ac. tract, Juan Ximenes Sur. ..... Location.

SMITH COUNTY

Sun Oil Co.'s No. 1 D. McGehee, 500 ft. W and 250 ft. S of SW cor. of Mrs. Julia Phillips 55-ac. tract, Thomas Quevado Sur. ..... Drlg. 3,818 ft.; top Pecan Gap 3,766 ft.

Thayer & Rogers' No. 1 Willingham, 150 ft. N and W of 14.5-ac. tract, Jacob Hernin Sur. ..... Shut down 2,000 ft.

Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S, W of 89-ac. tract in A. J. Legrone Sur., 4 miles SE of Winona ..... Shut down 3,681 ft.

VAN ZANDT COUNTY

L. R. Barton's No. 1 Wamble, 300 ft. from S and W of 100-ac. tract in Pleasant Young Sur. ..... Derrick.

Cranfill & Germany's No. 1 Swain, 137 ft. N and 50 ft. from W of excess strip on W side of O. L. and L. L. Swain farm ..... Shut down 14 ft.

T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-ac. tract, John Wright Sur. ..... Temporarily abnd.

Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E lines of Morris 160-ac. tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler ..... Temporarily abnd.

J. C. Fare's No. 1 P. S. Hand, C of Hand's 50-ac. tract, William Shuman Sur. ..... Drlg. 4,465 ft.

Hartt Oil Co.'s No. 1 Dr. L. M. Cox and A. C. Night Sur., 1,785 ft. N of S line and 524 ft. E of W line ..... Shut down 200 ft.

Humble Oil & Refining Co.'s No. 6 R. S. Blake, 150 ft. from N and 150 ft. from W of SW cor. of Mrs. E. E. Carroll farm, elevation 485 ft.; John Walling Sur. ..... Set 6⅝-in. csg. 2,546 ft.; top sand 2,547 ft.

Humble Oil & Ref. Co.'s No. 7 Blake, 1,021 ft. N of most southerly S line, 250 ft. from W line of 201.4-ac. tract, John Walling Sur. ..... Drlg. 2,380 ft.; top Austin 2,24; ft.; base 2,321 ft.

H. Helms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ..... Coring 2,840 ft.

Howard & Dooley's No. 1 Elliott 188-ac. tract in W. H. Bundy Sur. ..... Derrick.

Humble Oil & Ref. Co.'s No. 1 L. A. Dowdle, 1,027 ft. N of S line and 150 ft. E of W line, William Daniel Sur. ..... Temp. abnd. 2,987 ft.

Humble Oil & Ref. Co.'s No. 2 L. V. Freeman, 250 ft. S of N line and 250 ft. E of W line of lease, John Walling Sur. ..... Location.

Imperator Oil Co.'s No. 2 G. W. Carter, 175 ft. from S and 35 ft. from W of G. W. Carter 171-ac. tract, William Daniel Sur. ..... Shut down.

Jenkins et al's No. 1 V. T. Davis, SE cor. of 139.8-ac. tract, Nacogdoches County School Land ..... Shut down 3,031 ft.

Kelly Oil & Gas Co.'s No. 1 Lemsford, center of Lemsford tract, John Conner Sur. ..... Shut down 1,857 ft.

Neil McMehery's No. 1 R. V. Murphy, 150 ft. from N and 150 ft. W of survey, H. Bailey Sur. ..... Shut down 2,700 ft.

Pure Oil Co.'s No. 3 R. A. Howell, 225 ft. N and E of SW cor., Mund Gross Sur. ..... Rigging up.

Pure Oil Co.'s No. 2 A. G. Tunnell, 250 ft. N of S line and 200 ft. W of E line, John Walling Sur. ..... Drlg. 2,700 ft.

Pure Oil Co.'s No. 1 Wylie Enas, 835 ft. E of W line and 750 ft. N of S line, J. Prado Sur. ..... Cement csg. 2,858 ft.

Pure Oil Co.'s No. 1 Martin, 200 ft. from N and 225 ft. W of NE cor. of J. Schmitz Sur. in the J. Stephenson Sur. ..... Cement setting 2,776 ft.

Pure Oil Co.'s No. 6 A. D. Clark, 242 ft. W of E line and 212 ft. S of N line, John Walling Sur. ..... Drlg. 2,418 ft.

Pure Oil Co.'s No. 7 A. D. Clark, 200 ft. E of W line and 203 ft. S of N line of lease, John Walling Sur. ..... Setting 7-in. csg. 2,680 ft.

Pure Oil Co.'s No. 2 R. C. Crim, 250 ft. N of S line and 250 ft. W of E line of lease, Nacogdoches County School Land Sur. ..... Cement setting 2,875 ft.

Pure Oil Co.'s No. 1 Davis, 127 ft. from S and 200 ft. from W of 139-ac. tract, Nacogdoches County School Land ... . Derrick standing.

Roy Stumpff's No. 1 Riggs, 169 ft. from E and 155 ft. from S of 3-ac. tract, William Daniel Sur. ..... Derrick (rotary).

Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... Shut down 1,028 ft.

Vitek Oil Co.'s No. 1 Smith, 150 ft. S and 15 ft. from W of L. A. Smith 40-ac. farm in John Walling Sur. ..... Derrick.

Whitmore Oil & Gas Co.'s No. 1 R. W. Beggs, 300 ft. from S and 600 ft. from W, Raquet Sur. ..... Building derrick.

WOOD COUNTY

Loche & Clark's No. 1 A. C. Pick, 165 ft. S of NE cor. G. C. Reeves 25-ac. tract, Daniel Fuller Sur. ..... Shut down 997 ft.

GULF COAST FIELDS

(Continued from Page 51)

on a more or less uniform producing basis. Figures for the week ended January 3 were:

Gulf Coast Production

Average daily production for the week ending January 3:

SOUTHEAST TEXAS

Allen	215
Barbers Hill	21,270
Batson	1,075
Big Creek	3,000
Blue Ridge	1,450
Brenham	140
Boling	950
Clay Creek	1,250
Damon Mound	590
DeWalt	12,050
Esperson (Sheeks)	2,900
Fannett	500
Goose Creek	4,530
Hankamer	2,220
High Island	780
Hull	7,300
Humble	11,700
Lost Lake	350
Markham	200
Moss Bluff	85
Mykawa	225
Nash	250
North Dayton	1,080
Orange	2,200
Orchard	1,800
Pierce Junction	10,300
Port Neches	1,550
Raccoon Bend	8,750
Refugio	29,600
Rockland (Jasper)	15
Saratoga	1,220
Sour Lake	2,050
South Dayton	100
South Liberty	2,700
Spindletop	13,550
West Columbia	4,700
Total Southeast Texas	152,645
Week ending December 27	154,725
Decrease	2,080

SOUTH LOUISIANA

Anse La Butte	70
Bayou Blue	30
Bayou Bouillon	120
Black Bayou	1,050
Edgerly	425
Jennings	930
Hackberry	4,450
Lake Barre	1,700
Lake Pelto	100
Lockport	4,300
New Iberia	5
Port Barre	1,700
Sorrento	50
Starks	650
Sulphur	2,500
Sweet Lake	1,150
Vinton	5,600
Welsh	100
White Castle	1,000
Total South Louisiana	25,930
Week ending December 27	25,435
Increase	495
Total Gulf Coast	178,575
Week ending December 27	180,160
Decrease	1,585

TECHNOLOGY COURSES

The University of Michigan, department of chemical engineering, has issued a bulletin outlining numerous courses of study of direct interest to those preparing to become petroleum technologists. Undergraduate students are not permitted to sharply specialize but are guided through a broad fundamental training in chemical engineering with specialization reserved for graduate work.

It is reported that the important development within recent years has been the demand from the industries for men with graduate training in chemistry and allied subjects. During this year there are 51 graduate students enrolled in the department of chemical and metallurgical engineering at the University of Michigan, of whom 19 already have the Master's degree and are working for the Doctorate.

Copies of the bulletin may be obtained from the Chemical Engineering Department, University of Michigan, Ann Arbor, Mich.

J. A. McDONALD KILLED

CHATHAM, Ontario, Jan. 3.—J. A. McDonald, president of the Carbon Exploration Co. of Carbon, Alberta, was killed recently when his car overturned on the trail near Carbon. He has been for some years actively interested in a project to develop natural gas in the Carbon area.

Make Cementing Certain by using.....

K O N S E T

[A Sulco Product] **[Fully Protected by Patents]**

KONSET, the cement mixing compound OK'd by three governments—unequalled as a combined cement accelerator, hardener and waterproofing. Konsetted cement anywhere around the lease means permanently satisfying service. Nullifies the danger of mud contamination, leaky shoes and water encroachment back of the cement. Resists hydrogen sulphide. Konset will set in mud, oil or water. A great standby for pipe line maintenance. A Konset application made seven years ago to a corroded, leaky line is now still going strong. Bonds cement to the casing and anchors in the strata. Prevents corrosion from strong waters. Successful operators are never without Konset. It seeks new users on its record. Ask any operator who has tried them all!

Fissurseal

Manufactured Under Special License—

(Patents Pending)

For lost circulation, caving and heaving shale.

Needs no introduction to oil men—a combination of Konset—Fibermix and Slushmix Liquid—powerful—congealing—expanding.

Slushmix Powder

[Patent Pending]

Sealer • Mud Heavier • Lubricator

The triple action mud mixture that lubricates, seals and heavies. Remains always in suspension. Carries the cuttings from bit to surface. Acts as a binder in any mud—readily soluble in water. Picks up and walls up sand, shale etc.—the password for success in drilling operations. It pays to insist on Sulco Products.

Gelite

(Patents Pending)

The cheapest insurance you can buy against a mudded producing area.

Gelite lubricates the bit, casing and walls of the hole, preventing abrasions and reducing costs. It is the cheapest insurance any operator can buy for maximum production, in fact, its low cost cannot be considered an expense, but rather an investment that returns gratifying dividends in thousands of dollars saved. Insure success—insist on Gelite, the Sulco Product.

Also Slushmix Liquid

Other Sulco "Magic" Producers

Floyd Gibbons, we bet, would call the Sulco Laboratories the "House of Magic" for oilmen, out of which come technical products special and general to meet every operating need—Sulco Products. Time and again Sulco has pioneered to overcome the seemingly impossible—depend on SULCO, as operators do throughout the oil world. These products include in addition to the above:

Kleen-A-Well (cleans tubing and rods); Solrite (boiler compound); Deflect-O-Lite (aluminum paint for steel tanks, etc.); International Blue Paint; Graphite Boiler & Stack Paint; Sulco Powder Paint (mixed with water, works and looks like oil paint—all colors); Sulco Insulating Cement; Flameproofing (preservative for oilfield timbers).

MUD-FLUX

Sulco's newest "magic-maker." 1 gallon to 10 barrels, and presto! viscosity is reduced almost instantly, enabling the operator to increase weight and pump any weight mud. Get some of this new "wonder-worker," and watch its almost uncanny results.

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AND NIGHT-THROUGH

THE oil-wells shown above (owned by Gibson Brothers of McCamey, Texas) are equipped to operate twenty-four hours a day. Each derrick has a Kohler Electric Plant installed to provide constant, steady electric light for the night shift. Electric tools are also operated on current produced by these plants.

Kohler Electric Plants are the popular choice in the oil industry —not only at the wells, but at refineries, pumping-plants, as well as at retail service stations beyond the reach of light wires. They offer the safety and service of standard electric current which oilmen want. No storage batteries are required and each unit is compact and self-contained—ready to be moved quickly.

Standard electric current is generated at 110 or 220 volts A. C. or D. C. Capacities range from 800 watts to 10 K. W.

If you're interested in oil you'll be interested in Kohler Electric Plants. Mail the coupon for a booklet giving further information, specialized to your needs. Kohler Co. *Founded* 1873. Kohler, Wis.—*Shipping Point*, Sheboygan, Wis.—*Branches in principal cities.* . . . Manufacturers of Kohler Plumbing Fixtures.

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Gentlemen: Please send catalog describing Kohler Electric Plants.

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*Use in which interested*_____

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 42)

Bahan & Bahan's No. 1 Smith, 249 ft. W, 535 ft. N, SE cor. SW, Sec. 24-18-9.....Derrick.
Jordan Drlg. Co.'s No. 7 Cole, 265 ft. S, 1,459 ft. W, NE cor., Sec. 49, in Sec. 50-18-4.....Location (reported drlg. in error).
United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4.....Location.

RICHLAND PARISH

Hope Prod. Co.'s No. 2 H. L. Thomason, 669 ft. E, 660 ft. S, NW cor., Sec. 11-16-6.....Cmtd. 6-in. 2,287 ft.
La. G. & F. Co.'s No. 1 Binion, 813 ft. E, 496 ft. N, SW cor. NW, Sec. 2-16-6.....Location.
United (was Southern) Carbon Co.'s No. 2 Cooper, 660 ft. N, 3,551 ft. E, SW cor., Sec. 13-16-6.....Location.
Southern Carbon Co.'s No. 1-B Hale, 1,320 ft. N, 660 ft. E, SW cor., Sec. 15-16-6.....Cmtd. 6-in. 2,285 ft.
Southern Carbon Co.'s No. 2-B J. H. Hemler, Sec. 14-16-6..Drlg. 2,340 ft.
Southern Carbon Co.'s No. 1 Hixson, 660 ft. N, 760 ft. W, SE cor., Sec. 33-16-6.....Location.
Southern Carbon Co.'s No. 2-B M. & M. McCoy (was No. 1-D), 1,980 ft. S, 660 ft. W, NE cor., Sec. 30-16-6....Cmtd. 6-in. 2,285 ft.
Southern Carbon Co.'s No. 7 F. B. and E. A. Sartor, 2,540 ft. S, 660 ft. E, NW cor., Sec. 17-16-7.....Rig up.
State Line O. & G. Co.'s No. 1 Hewitt, 1,721 ft. S, 957 ft. E, NW cor. SW, Sec. 32-16-6.....Drlg. 2,430 ft.
State Line O. & G. Co.'s No. 1 Noble-Morris, 917 ft. N, 339 ft. W, SE cor. SE SW, Sec. 35-16-5.....Rig up.
United Carbon Co.'s No. 1 Lindow, 1,980 ft. S, 37 ft. E, NW cor., Sec. 15-16-6.....Rig up.

SABINE PARISH—ZWOLLE

W. M. Coates' No. 2 Sabine Lbr. Co., 330 ft. S, 330 ft. E, NW cor. NW SW, Sec. 1-7-12.....Location.
W. M. Coates' No. 2-B Sabine Lbr. Co., 330 ft. W, 735 ft. N, SE cor. SW SW, Sec. 1-7-12.....Location.
Tom David's No. 1 Holliday (was T. D. Allison's), Sec. 31-8-12, Zwolle Townsite .....S.D. wtr. 1,350 ft.
Tom David's No. 1 Neville & Roberts.....O.W.D.D; completed Apr. 18, 1930.
Davis & Tyson's No. 1 Neville & Roberts.....Flowed 75 bbls. 2,187 ft; arranging to shoot 2,400 ft.
R. L. Gay's No. 2-A Sabine Lbr. Co., 330 ft. N, 330 ft. E, SW cor. NE NW, Sec. 1-7-12.....Location.
F. M. Hood's No. 1-B Winston (was No. 2), 700 ft. E, 425 ft. S, NW cor., Sec. 31-8-12, Zwolle Townsite....S.D. 1,065 ft.
Ab Jones et al's No. 1 Ferguson, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 33-8-12.....Drlg. 1,654 ft.
Loring Oil Co.'s No. 14 Bowman-Hicks Lbr. Co., SE cor., SW SE, Sec. 33-8-12.....Began drlg. Dec. 23; cmtd. 10-in. 102 ft; drlg. 1,290 ft.
Loring Oil Co.'s No. 15 Bowman-Hicks Lbr. Co., NE cor., NW SE, Sec. 2-7-12.....Derrick.
Ohio Oil Co.'s No. 1 Brown, 330 ft. N, 330 ft. W, SE cor. SW SW, Sec. 35-8-12.....Drlg. 1,655 ft.
H. W. Perritt, tr.'s No. 1 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. SW, Sec. 2-7-12.....W.O.S.R. 2,288 ft.
H. W. Perritt's No. 1-B Bowman-Hicks, NW cor. SE NE, Sec. 2-7-12 .....Location.
J. M. Tompkins' No. 1 M. R. Stoker, 300 ft. S, 100 ft. W, NE cor. SW, Sec. 10-7-11.....Location.
J. C. Walton's No. 1 Sabine Lbr. Co., 300 ft. S, 300 ft. W, NE cor. NW, Sec. 11-7-12.....Rig up.

SABINE PARISH—BLUE LAKE

R. L. Gay's No. 9 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 18-7-13.....Arranging test 2,690 ft.

WEBSTER PARISH—SAREPTA

Cassidy & Davis' No. 1 Nickerson, 300 ft. S, 300 ft. W, NE cor. SW, Sec. 29-23-10.....Derrick.

ARKANSAS

JOHNSON COUNTY
(Cable tools)

Ark.-La. P. L. Co.'s No. 1 Hudson et al, 660 ft. N, 545 ft. E, SW cor. SE NE, Sec. 14-10-24.....Tested 16,000,000 ft. gas 2,590-96 ft; cmtd. 10-in. 2,607 ft.
River Valley Gas Dev. Co.'s No. 1 W. F. Collier, 350 ft. S, 330 ft. E, NW cor. SE SE, Sec. 21-9-25.....Drlg. 1,165 ft.

OUACHITA COUNTY—SMACKOVER

L. H. Hamilton's No. 3 Doyle, 100 ft. E, 400 ft. N, SW cor. SE SE, Sec. 23-15-16.....Hole clean; S.D; W.O. 2,020 ft.

OUACHITA COUNTY—STEPHENS

J. D. Reynolds' No. 1 Pace, Lot 28, Sec. 21-15-19.....Cmtd. 10-in. 44 ft; drlg. 1,015 ft.
Wesson & Bonner's No. 1 Wesson, 500 ft. W, 175 ft. N, SE cor. SW NW, Sec. 22-15-19.....Bailing to test 2,151 ft.

UNION COUNTY—CHAMPAGNOLLE

Ohio Oil Co.'s No. 11 Crain, 330 ft. N, 330 ft. W, SE cor. SE SW, Sec. 1-17-14.....Drlg. 2,766 ft.
Ohio Oil Co.'s No. 2 Raulston, 330 ft. S, 330 ft. E, NW cor. NW SE, Sec. 12-17-14.....Location.

UNION COUNTY—EL DORADO

Rice Drlg. Co.'s No. 1 Watley, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15.....S.D; repairing rig; T.D. 1,520 ft.
Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 16-19-15.....Began drlg. Dec. 13; cmtd. 10-in. 215 ft; S.D.

EAST TEXAS

HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Argus, 755 ft. N, 699 ft. W, Mile Post 27, in J. Womack Sur. .....Location.
Shell Rock Pet. Co.'s No. 1 Oliver Dougherty, W. D. Burris Sur. .....S.D; fishing D.S. 3,568 ft.

PANOLA COUNTY

Dillon & Brodhorn's (was W. G. Banks et al's), No. 1 C. O. Baldwin, 1,395 ft. W, 1,362 ft. S, NE cor. Baldwin 290 ac. in Hampton West Sur. .....Rig up.
S. E. Bell et al's No. 1 Burnett Lbr. Co., C, S. B. Hendricks Sur. .....S.D. for repairs 2,863 ft.
Creighton & Hart's No. 1 Greeny-Kyle, C, Greeny-Kyle 60 ac., Jas. Tippett Sur. .....Drlg. hard lime 3,601 ft.
Texas-La. Prod. Co.'s No. 1 Baker, 1,000 ft. N, 550 ft. W, SE cor., 63-ac. Baker tr., in B. C. Jordan Sur. ...Drlg. hard lime 4,300 ft.
Knox et al's No. 1 Dunham (was Jackson et al's), 150 ft. W, 150 ft. N, SE cor. M. I. Dunham 29 ac., in Chas. Haley Sur. .....Arranging 5 3/16-in. and packer 2,865 ft; T.D. 2,888 ft.
Nat. Gas Prod. Co.'s No. 4 Roquemore, 6,203 ft. E. 6,969 ft. S, NW cor., B. C. Jordan Sur. .....O.W.D.D; completed May 4, 1928; 3,000,000 ft. gas 966 ft; arranging to deepen.
Nat. Gas Prod. Co.'s No. 1 H. H. Alvord, 6,777 ft. S, 6,162 ft. E, NW cor., B. C. Jordan Sur. .....Drlg. lime 3,525 ft.
Doris Thomason's No. 15 Crenshaw, 1,992 ft. S, 2,305 ft. E, SW cor., Jno. Womack Sur., in B. C. Jordan Sur. .....Derrick.

MISSISSIPPI

HINDS COUNTY

Feazel O. & G. Co.'s No. 1 Garrett, SE cor. NW, Sec. 2-5-1e .....Location.
Cleve Love et al's No. 2 Ridgeway-McGhee, SE cor. NW, Sec. 2-5-1e .....Rigging up.
Miss. Pet. Co.'s No. 2 Baptist Orphanage, 210 ft. N, 210 ft. W, SE cor. NE SE, Sec. 25-6-1e.....Rig up.

RANKIN COUNTY

Feazel O. & G. Co.'s No. 1 Cox, SE cor. SE SE, Sec. 12-5-1e .....Began drlg. Dec. 5; cmtd. 10-in. 83 ft; 6⅝-in. 2,371 ft.
Gulf Ref. Co.'s No. 1 Hamilton, 1,320 ft. N, 1,320 ft. E, SW cor., Sec. 12-5-1e .....Coring 3,725 ft.
Pearl River O. & G. Co.'s No. 3 Pate, Sec. 12-5-1e.....Drlg. shale 2,000 ft.

Miss. G. & F. Co.'s No. 1 Hanna, SW cor. SW NE, Sec. 14-5-1e ..... Derrick.
Pioneer O. & G. Co.'s No. 1 Ragland, NE cor. SW SW, Sec. 12-5-1e ..... Derrick.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 42)

NACHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 28-9-10 ..... S.D. 3,718 ft.
J. W. Cooper et al's No. 1 Cooper, NW SW, Sec. 35-11-10 ..... Drlg. 2,300 ft.
Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10 ..... Top chalk 1,400 ft; S.D. 1,421 ft.
Gulf Ref. Co.'s No. 1 Bodcaw, 1,910 ft. S, 605 ft. W, NE cor., Sec. 13-13-8 ..... Drlg. gummy shale 2,224 ft.
C. M. Talley et al's No. 1 C. M. Talley, 1,980 ft. W, 660 ft. S, NE cor. SE, Sec. 29-11-10 ..... Derrick.

RED RIVER PARISH

Lucky Strike Oil Co.'s No. 1 Chaffraix, 200 ft. S, 200 ft. E, C, Sec. 33-12-10 ..... S.D; contract depth 3,000 ft.

RICHLAND PARISH

Alto Gas Co.'s No. 2 Hunt, 660 ft. S and E, NW cor., Sec. 13-17-5 ..... Derrick.
La. G. & F. Co.'s No. 1 Glanton, 262 ft. E, 618 ft. N. SW cor. NW SE, Sec. 33-17-6 ..... Cmtd. 6-in. 2,296 ft.
Palmer Corp.'s No. 2 Seubert, 660 ft. N, 660 ft. W, SE cor. SE NW, Sec. 35-17-5 ..... Location.

SABINE PARISH

Diffie & Barnett's No. 1 Lites (was J. W. Clark's), 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 34-8-11 ..... Began drlg. Nov. 20; cmtd. 10-in. 105 ft.
Tom David's No. 1 Smith, 460 ft. N, 200 ft. W, SE cor. SE SE, Sec. 27-8-10 ..... Drlg. 2,200 ft.
Essco Pet. Co.'s No. 1 La. Long Leaf Lbr. Co., 487 ft. N, 44 ft. W, SE cor. SW SW, Sec. 35-8-11 ..... Tested dry 2,420 ft. and 2,600 ft; W.O.
Eylers O. & G. Co.'s No. 1 Frazier, 330 ft. S, 330 ft. W, NE cor. NW SW, Sec. 10-8-11 ..... Dry 2,650 ft; S.D.
Franks et al's No. 1 Dew, 200 ft. N, 300 ft. E, SW cor. SE, Sec. 22-8-11 ..... Cementing 6-in. 2,211 ft.
R. L. Gay, tr.'s No. 1-A Sabine Lbr. Co., 212 ft. S, 170 ft. E, NW cor. SE NW, Sec. 1-7-12 ..... 6-in. stuck 2,200 ft; cmtd. 4½-in. 2,290 ft; arranging test 2,690 ft.
Lacy Jessup Oil Co.'s No. 1 Brown Lbr. Co. (was Lacey et al's), S NW NE, Sec. 28-8-10 ..... S.D. 3,160 ft.
Lacey Prod. Co.'s No. 1 Cooper, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 30-8-11 ..... W.O.S.R; 1,200 ft. oil; T.D. 2,620 ft.
Lawrence et al's No. 1 Hubley, 330 ft. N, 330 ft. W, SE cor. NE, Sec. 21-7-11 ..... S.D. 2,650 ft.
Lide et al's No. 1 Ponder, 990 ft. N, 990 ft. W, C, Sec. 15-7-11 ..... Top marl 2,395 ft; cmtd. 6-in. 2,385 ft; T.D. 2,407 ft; tested dry 2,412 ft; 100 ft. oil in hole from 2,422 ft; D.S. test dry; show oil and gas 2,800 ft; W.O.S.R.
Lide et al's No. 2 Ponder, 200 ft. S, 200 ft. E, NW cor. NE NW, Sec. 15-7-11 ..... Derrick.
Longoria et al's No. 1 Belton, 330 ft. S, 330 ft. E, C, NE, Sec. 31-9-12 ..... Rig up.
Magnolia Pet. Co.'s No. 1 R. J. Tucius, 990 ft. S, 990 ft. W, NE cor. NW NE, Sec. 2-5-12 ..... Rig up.
McDaniel & Lieber's No. 2 Batson, 480 ft. S, 220 ft. E, NW cor. SW SE, Sec. 16-8-12 ..... S.O; tested dry 2,565 ft; S.D; W.O.
Frank Melat, Inc.'s No. 1 Sabine Lbr. Co., 330 ft. N, 330 ft. E, SW cor. SW, Sec. 6-7-11 ..... Began drlg. Dec. 13; cmtd. 10-in. 106 ft.
Frank Melat, Inc.'s No. 2 Sabine Lbr. Co., 330 ft. S, 330 ft. W, NE cor. NE NW, Sec. 14-7-12 ..... Tested dry 2,500 ft.
Merritt et al's No. 1 La. Long Leaf Lbr. Co., S½ NE NE, Sec. 33-8-11 ..... Dry 2,500 ft; W.O.
P. & G. Oil Co.'s No. 1 Williams, 330 ft. S, 330 ft. W, NE cor. SE NW, Sec. 21-7-12 ..... Rig up.
W. P. Pearce et al's No. 1 G. Pearce, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 10-7-11 ..... Cmtd. 6⅝-in. 2,339 ft.
Pelican Nat. Gas Co.'s No. 7 La. Long Leaf Lbr. Co., 300 ft. S, 300 ft. W, NE cor. NW SW, Sec. 10-7-11 ..... Drlg. 2,358 ft.
Pelican Nat. Gas Co.'s No. 7 Sabine Lbr. Co., 300 ft. S, 300 ft. W, NE cor., Sec. 11-7-12 ..... 600 ft. oil in hole; W.O; T.D. 2,399 ft.
D. H. Riddick's No. 1 Scretchfield, 400 ft. E, 400 ft. N, SW cor. NW SE, Sec. 18-9-12 ..... Made 30-ft. hole 3,280-3,310 ft; S.D.
T. G. Shaw et al's No. 1 Sabine Lbr. Co., 150 ft. N, 150 ft. E, SW cor., Sec. 1-7-12 ..... Cmtd. 6⅝-in. 2,324 ft; bailed dry 2,384 ft.
Trans-America Oil Corp.'s (was Southland Oil Co.'s), No. 1 Carter, 1,030 ft. W, 345 ft. N, SE cor. SE NE, Sec. 36-8-12 ..... W.O; 60 ft. oil in hole; T.D. 2,515 ft.
A. H. Tarver, tr.'s No. 1 Baker, 330 ft. S, 330 ft. E, NW cor. NE, Sec. 36-8-12 ..... W.O. 2,825 ft.
Towery Drlg. Co.'s No. 1 Sabine Lbr. Co. (was D. M. Lide's), 330 ft. S, 330 ft. E, NW cor., Sec. 12-7-12 ..... W.O.S.R. 2,436 ft.
The Texas Co.'s No. 1 Stoker, 330 ft. E, 300 ft. S, C, Sec. 10-7-11 ..... W.O.S.R. 2,554 ft.
The Texas Co.'s No. 2 Stille, 310 ft. W, 320 ft. S, NE cor. NW, Sec. 3-7-11 ..... Derrick.
Triangle Pet. Co.'s No. 1 Sabine Lbr. Co. (was R. B. Whittle's), 330 ft. N, 330 ft. E, SW cor. SE SW, Sec. 36-8-12 ..... Cmtd. 6⅝-in. 2,274 ft.
Wilson & Son's No. 1 Gandy-Garrett, NW SW, Sec. 4-5-12 (portable rig) ..... Drlg. 2,170 ft.
John Woodley's No. 1 Sabine Lbr. Co., 400 ft. S, 330 ft. W, NE cor. SE, Sec. 12-8-12 ..... Began drlg. Dec. 16; cmtd. 10-in. 103 ft.

TENSAS PARISH

Seip et al's No. 1 Fowler, C SW NE, Sec. 10-10-10 ..... S.D. 905 ft.
A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-13 ..... Reamed to bottom; S.D. 2,780 ft.

UNION PARISH

Ouachita Nat. G. & O. Co., Inc.'s No. 1 Smith, 660 ft. S, 1,224 ft. W, NE cor., Sec. 36-20-2 ..... Location.

WEBSTER PARISH

Coyle, tr.'s No. 1 Frazer, 200 ft. N, 200 ft. E, SW cor. NE SE, Sec. 27-23-11 ..... Derrick.
Gehrig's (was Girard Oil Co.'s) No. 1 R. H. Miller, 330 ft. S, 990 ft. W, C, Sec. 16-18-10 ..... Coring 3,275 ft.
Red Hawk Oil Co.'s No. 1 Mathews, 330 ft. N, 330 ft. E, C, Sec. 11-23-9 ..... Derrick.

ARKANSAS

CHICOT COUNTY

R. R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 31-18-3 ..... Cmtd. back to 2,888 ft; T.D. 2,925 ft.

CLAY COUNTY

S. C. Jeffus, tr.'s No. 2 Underwood, 568 ft. N, 300 ft. W, C NW SE, Sec. 4-20-8 ..... Cmtd. 6-in. 237 ft.

CLEBURNE COUNTY
(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... Swedging csg. 2,300 ft; T.D. 3,740 ft.

DALLAS COUNTY

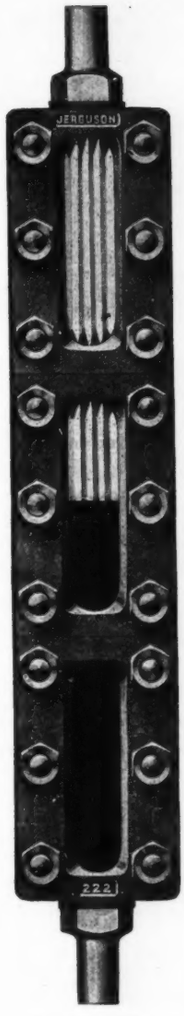
E. C. Brewer's No. 1 W. E. Hillman, Sec. 20-10-13 ..... Drlg. sandy shale and boulders 1,288 ft.
J. H. James, tr.'s No. 1 Fordyce Lbr. Co., NW cor., Sec. 11-9-15 ..... Derrick.

JERGUSON

REFLEX GAGES

have been used for steam boilers for 25 years and are now being used by leading oil companies for indicating oil levels in tanks, towers, stills, etc.

The *empty* space appears WHITE



The *liquid* shows BLACK

They are safe and durable at the highest pressures and temperatures. We can furnish gages with or without valves for every type of service. Full information upon request.

JERGUSON GAGE & VALVE CO.
MYSTIC AVE. AND NORTHERN ARTERY
SOMERVILLE, MASS.

FRANKLIN COUNTY

Red Bank Oil Co.'s No. 1 Hamm, 660 ft. N, 660 ft. E, C, Sec. 33-10-6 ..... Sand 3,775-84 ft; tested 8,000,000 ft. gas, 875 rock; drlg. sandy shale 3,788 ft.

GARLAND COUNTY
(Cable tools)

Givens et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-8-19 ..... Hole full S.W; pulling 5 3/16-in.; T.D. 3,756 ft.

HOT SPRINGS COUNTY

Anisman et al's No. 1 Hinson est., NE NE, Sec. 19-4-16 (portable rig) ..... Claim gas show 14-ft. sand 1,604 ft; no 5 3/16-in. csg. set; S.D; W.O; 1,604 ft.

John Watkins' No. 1 Cunningham (was J. R. Lockhart's), 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16 ..... Cmtd. 12½-in. 42 ft; S.D. 110 ft.

LAFAYETTE COUNTY

McIver et al's No. 1 Hottle, NW cor. NE, Sec. 1-20-6 ..... Began drlg. Nov. 8; S.D. 21 ft.

LINCOLN COUNTY

B. F. Thompson, tr.'s No. 4 McGhee, 930 ft. S, 150 ft. W, C, Sec. 8-8-7 ..... Rigging up.

LITTLE RIVER COUNTY

G. R. Stevens et al's No. 1 Greason (was A. L. Buck's), NW NW, Sec. 25-12-32 ..... D.S. stuck 2,100 ft; old T.D. 2,502 ft.

LOGAN COUNTY

Ark.-La. P. L. Co.'s No. 1 Jno. Jansen, 350 ft. S, 455 ft. E, NW cor. NE NE, Sec. 35-8-24 ..... S.D. 2,400 ft.
J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... S.D; W.O. 3,610 ft.

MADISON COUNTY
(Cable tools)

J. W. Baxter's No. 2 Hallin, C, Sec. 17-16-25 ..... T.A. 405 ft.
J. W. Baxter's No. 3 Hallin, NE SW, Sec. 1-17-26 ..... S.D. 50 ft.

MILLER COUNTY

Bullock Oil Co.'s No. 1 Hervey, SE NE, Sec. 33-14-26 ..... Coring 2,616 ft.
East Texas O. & G. Co.'s No. 1 Harvey, 500 ft. E, 300 ft. S, NW cor., Sec. 2-15-26 ..... Set full string 4½-in. 2,957 ft; T. D. 2,961 ft.

E. & F. Oil Co.'s No. 1 E. L. Beck, 200 ft. S, 200 ft. E, NW cor. SW, Sec. 36-15-26 ..... S.D; sidetracking short string 4½-in; T.D. 2,961 ft.

Fitzwater et al's No. 1 Beck, 200 ft. N, 200 ft. W, SE cor. SW SE, Sec. 33-15-26 ..... Began drlg. Oct. 13; cmtd. 10-in. 93 ft.

Gusher Bend Oil Co.'s No. 1 Adams, 120 ft. S, 800 ft. W, NE cor. NW, Sec. 26-14-26 ..... S.D. 160 ft.
Lenz et al's No. 2 Johnson, SE cor., Sec. 24-15-16 ..... Drlg. 4,200 ft.
Lenz et al's No. 3 Johnson, 250 ft. W, 150 ft. N. SE cor. NE NW, Sec. 24-15-26 ..... S.D. 2,850 ft.
Salzer & McRae's No. 1 Rose, SW cor. NE SW, Sec. 9-16-26 ..... S.D. fuel 475 ft.

OUACHITA COUNTY

Belmont et al's No. 1 Buck, SE cor. SE SW, Sec. 16-15-17 ..... S.D. 2,907 ft.
Copenhaven et al's No. 1 Elliott, Sec. 11-15-17 ..... D.S. stuck; T.D. 2,114 ft.
A. B. Turner, tr.'s No. 1 Dave Brown, 220 ft. N, 220 ft. E, SW cor., Sec. 23-15-18 ..... Cored top red beds 2,700 ft; drlg. 2,750 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14 ..... Drlg. 1,850 ft.
E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24 ..... Derrick.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 2 McFaddin, 685 ft. N, 485 ft. W, SE cor. NE SW, Sec. 15-9-21 ..... S.D. 2,310 ft.

SCOTT COUNTY

Ark. Valley Gas Co.'s No. 1 Turner, C SE, Sec. 27-5-30 ..... Location.
Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26 ..... Sidetracking tools 1,436 ft; T.D. 1,540 ft.

UNION COUNTY

S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17 ..... Drlg. 2,888 ft.
H. L. Hunt's No. 5 Swilly, 330 ft. S, 330 ft. W, NE cor., Sec. 28-16-16 ..... W.O.S.R; 2,000 ft. fluid; T.D. 2,689 ft.

H. L. Hunt's No. 6 Swilly, 330 ft. N, 330 ft. W, SE cor., Sec. 21-16-16 ..... 1,000 ft. fluid 4,090 ft; S.W. 2,711 ft; W.O.S.R.

Marine Oil Co.'s No. 3-B Thompson, 330 ft. S, 330 ft. E, NW cor. SE NE, Sec. 10-18-13 ..... Drlg. 2,510 ft.
Marine Oil Co.'s No. 1-F Winn, Sec. 10-18-13 ..... Hole full fluid 50% S.W; waiting on air; T.D. 3,604 ft.

Oil Field Corp.'s No. 1 Simmons, 330 ft. S, 330 ft. E, NW cor., Sec. 13-18-13 ..... D.S. test 3,556-3,602 ft; S.W; T.A. 3,602 ft.

VAN BUREN COUNTY

Glenn Kohle et al, tr.'s No. 1 Scalan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... S.D. 50 ft.

WASHINGTON COUNTY
(Cable tools)

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32 ..... S.D; W.O. 602 ft.
C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... S.D. 1,697 ft.
Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 30-15-32 ..... U.R. 8-in. to T.D. 1,500 ft.
H. H. Taylor et al's No. 1 Runny, C NE SW, Sec. 1-13-29 ..... S.D. 1,700 ft.

YELL COUNTY
(Cable tools)

Tegmeier & Luckett's No. 1 Falcon, Sec. 36-7-21 ..... S.D. 5,710 ft.

EAST TEXAS
BOWIE COUNTY

Joe Burnham et al's No. 1 G. W. Burnett, 150 ft. W, 400 ft. S, NE cor. G. W. Burnett 76 ac., in W. H. Janes Sur. ..... Base Austin chalk 3,095 ft; top red beds 3,145 ft; S.D. 3,150 ft.

Maud-Redwater Oil Co.'s No. 1 Merritt, 175 ft. N, 175 ft. E, SE cor. G. W. Hardige 100-ac. tr. on Floyd Merritt tr. in Y. S. McKinney Sur. ..... S.D. 632 ft.
Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 655 ft. W, SE cor. T. M. Rice Sur. ..... S.D. 720 ft.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tr., in J. H. Murphy Sur. ..... Cored sand 3,510-20 ft; drlg. 3,600 ft.

CASS COUNTY

Wesley Morse et al's No. 1 Henderson, 800 ft. E, 1,100 ft. S, NW cor. C. E. Bailey Sur. ..... Derrick.
Olds & Smith's No. 1 Atheny, 3,056 ft. W-E line, 856 ft. S-N line, J. C. Byers Sur. ..... No 10-in; cmtd. 12½-in. 40 ft.
Phillips Pet. Co.'s No. 1 J. R. Olds, 300 ft. N, 170 ft. E, SW cor., J. A. Stephenson Sur. ..... Reaming to bottom; T.D. 3,920 ft.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. ..... Cored limey shale 2,270-75 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur. ..... Began drlg. Dec. 28; S.D. 25 ft.

MARION COUNTY

P. E. Hussey's No. 1 A. A. Trammell, Chas. Lockhart Sur. ..... Resuming 1,750 ft; T.D. 1,884 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hosaler, E. Hughhart Sur. ..... Drlg. 2,795 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. ..... Swedging 3 joints collapsed 8-in; arranging to cmt. 6⅝-in. and packer 2,812 ft.

SABINE COUNTY

Benedum & Trees Oil Co.'s No. 1 Nona Mills Lbr. Co., Jas. Mason Sur. ..... S.D; W.O. 4,703 ft.

SHELBY COUNTY

Chapparell Oil Co.'s No. 2 Holt, Matthew Moore Sur. ..... Hole clean; arranging to deepen; 3,097 ft.
G. R. Ridgeway's No. 1 G. D. Parker, 4,980 ft. E, 750 ft. N, SW cor., Jessie McKelvey Sur. ..... S.D; W.O. 3,018 ft.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 40)

Chapman et al's No. 10-D Abbott ..... T. D. 1,951 ft.; drlg.
Chapman et al's No. 2-E Sides ..... Location.
Chapman et al's No. 1-F Sides, Simon Miller Sur. ..... T. D. 1,350 ft.; drlg.
Chapman et al's No. 1-G Sides, P. Prator Sur. ..... T. D. 1,880 ft.; drlg.
Collins et al's No. 6 Lawrence ..... Location.
J. L. Collins & Co.'s No. 7 M. V. Lawrence, 150 ft. from E line, 215 ft. from S line of 27-ac. tract in the S. Miller Sur. ..... Setting csg.; shut down for water
Ertell et al's No. 6 J. C. Abbott ..... T. D. 2,620 ft.; swabbing.
E. E. Ertell's No. 7 J. C. Abbott ..... T. D. 100 ft.; standing.
E. L. Chapman et al's No. 2-A Sides ..... Rigging up.
J. L. Collins & Co.'s No. 5 M. V. Lawrence, 150 ft. from W line, 515 ft. from S line of 27-ac. tract, S. Miller Sur. ..... T. D. 1,402 ft.; standing.
Sequoia Oil Co.'s No. 7 T. P. Simmons ..... Location.
G. Stratton's No. 5 J. C. Abbott, 450 ft. from E line, 150 ft. from S line of 32-ac. tract, S. Miller Sur. .... T. D. 1,730 ft.; set csg.

PETTUS AREA—BEE COUNTY

Batex Petroleum Co.'s No. 3 Burnett, 360 ft. from N line, 600 ft. from E line of 320-ac. tract, Kerr Sur. ..... Location.
J. L. Mauldin's No. 1 fee, 1,300 ft. N of S line, 150 ft. E of Medio Creek, Kerr Sur. ..... T. D. 3,734 ft.; shut down for fuel.
Houston Oil Co.'s No. 1, Blk. 23 ..... T. D. 3,911 ft.; to be deepened.
Houston Oil Co.'s No. 1, Blk. 33 ..... T. D. 3,914 ft.; to be deepened.
Union Producing Co.'s No. 13 Ray, George Habbermacher Sur. ..... T. D. 3,683 ft.; waiting for storage.
Union Producing Co.'s No. 26 Ray, 3,500 ft. from S line, 2,000 ft. from E line, P. Miller Sur. ..... Location.

AGUA DULCE FIELD—NUECES COUNTY

South Texas Production Co.'s No. 3 Walter, 800 ft. from S line, 460 ft. from E line of Walters tract in Sec. 34 ..... T. D. 1,984 ft.; standing.
Houston Oil Co.'s No. 1 Comstock, Sec. 86, Benton Pasture Sur. ..... T. D. 4,913 ft.; shut in for pipe line.

SAXET FIELD—NUECES COUNTY

O. C. Best et al's No. 1 Boory ..... Derrick.
Houston Oil Co.'s No. 1 Joe Hunter, Sec. 591 ..... T. D. 3,127 ft.; coring.
Houston Oil Co.'s (Andy Bowen) No. 1 Prieur, H. B. Sheppard Sur. ..... T. D. 765 ft.; drlg.
Kepley Prod. Co.'s No. 1 Donnigan, 200 ft. N line, 200 ft. E line of lease ..... T. D. 1,655 ft.; coring.
Moody-Seagraves Producing Co.'s No. 1 Smith, 450 ft. from N and E line of 120-ac. tract, J. Dunn Sur. .... T. D. 4,100 ft.; setting liner.
W. L. Pearson Properties' No. 4 Dunn, 300 ft. S of Bay ..... Reinstated; T. D. 2,600 ft.; set 4½-in. csg.
Pearson Properties, Inc.'s No. 1 State National Bank .... T. D. 5,515 ft.; will plug back to 2,480 ft.

LAREDO DISTRICT

SCHOOLFIELD—O'BYRNE POOL—DUVAL COUNTY

Magnolia Petroleum Co.'s No. 1 Edge-Hahl, 150 ft. from N line, 150 ft. from W line survey ..... T. D. 4,982 ft.; abnd.
Magnolia Petroleum Co.'s No. 1 Wilson, 330 ft. N line, 330 ft. E line, Sur. 136 ..... T. D. 1,400 ft.; drlg.

RANDADO POOL—JIM HOGG COUNTY

J. W. Pippin's No. 1 Hinnant, 150 ft. each way from SW cor., Blk. 11, Sur. 147 ..... Derrick.

KOHLER POOL—DUVAL COUNTY

Humble Oil & Refining Co.'s No. 50 Kohler, 2,805 ft. from S line, 165 ft. from W line of Sur. 164 ..... T. D. 2,442 ft.; fishing.

COLE POOL—DUVAL COUNTY

Magnolia Petroleum Co.'s No. 4 Benavides, 150 ft. from NE line, 450 ft. from NW line, Blk. 28, Sur. 174 .... T. D. 2,848 ft.; 5,000,000 ft. gas, 1,000 lbs. pressure.
Southern Oil Co.'s No. 2 King-Harper, 1,794 ft. E line, 729 ft. N line of Sur. 323 ..... Location.

ROMA POOL—STARR COUNTY

The Texas Company's No. 5-A V. C. de Guerra, 675 ft. from N line, 675 ft. from E line, Share 305, Por. 67, Jurisdiction of Mier ..... T. D. 3,641 ft.; completed gas well; 750 lbs. pressure.

MID-OJUELOS—WEBB COUNTY

O. W. Killam's No. 4 Garcia, 950 ft. E line, 300 ft. N line, Blk. 11, Sur. 608 ..... T. D. 1,893 ft.; drlg.

REISER POOL—WEBB COUNTY

O. W. Killam's No. 1 Johnson, Sur. 1,617 ..... Location.

COLE POOL—WEBB COUNTY

O. W. Killam's No. 1 Cuellar, Share 4, Cuellar grant .... Derrick.
Magnolia Petroleum Co.'s No. 1 Peal, Share 3, Cuellar grant ..... Derrick.

CAROLINA-TEXAS POOL—WEBB COUNTY

George S. Marshall's No. 1 C. W. Webster, 810 ft. from S line, 150 ft. from W line, Sur. 684 ..... T. D. 3,073 ft.; sand 3,057-73 ft.; waiting on cement.

CHARCO REDONDO POOL—ZAPATA COUNTY

Midwest Public Utilities' No. 1 Garza, 450 ft. SW line, 450 ft. SE line, Blk. 33, Pedernal grant ..... T. D. 1,560 ft.; drlg.

JENNINGS-MUCKELROY POOL—ZAPATA COUNTY

Allied Oil & Gas Co.'s No. 12 Guiterrez, 750 ft. from NE line, 5,663 ft. from SE line, Share 4, Fansler Partition, Comitas grant ..... T. D. 100 ft.; standing.
Allied Oil & Gas Co.'s No. 1 Pedro de los Santos, 1,750 ft. SE line, 450 ft. SW line, Share 6, Fansler Partition, Comitas grant ..... T. D. 1,373 ft.; set csg.; waiting on cement.
Claypool and Nixon's No. 1 Garza, Blk. 11, Subdivision Zorro Ranch, Comitas grant ..... Location.
Nordan and Morris and Grimm and Yakey's No. 1 S. Bustamente, 990 ft. from NE line, 150 ft. from NW line, Share 34, Fansler Partition, Comitas grant .. Derrick.
J. I. Newton's No. 1 Trevino, Blk. 7, Sur. 66 ..... Rigging up.
S. T. Phelps' (Blankenship) No. 2 Garza, 425 ft. W line, 425 ft. E line, Blk. 2, Sur. 413 ..... T. D. 1,623 ft.; resumed drlg.
Shankle-Newton's No. 8 Guiterrez, 4,525 ft. SE line, 150 ft. SW line, Share 4, Comitas grant ..... Location.
W. R. Shankle's No. 7 Guiterrez, 2,100 ft. from NE line, 2,898 ft. from NW line, Share 4, Fansler Partition, Comitas grant ..... Location.
S. R. C. Oil Co.'s No. 1 Cuellar, 150 ft. S and W lines, Blk. 16, Sur. 62 ..... Location.
S. R. C. Oil Co.'s No. 1 F. Cuellar, 300 ft. from S. line, 300 ft. from W line, Blk. 6, Sur. 285 ..... T. D. 2,458 ft.; abnd.
S. R. C. Oil Co.'s No. 2 F. Cuellar, 300 ft. from S line, 300 ft. from E line, Blk. 8, Sur. 19 ..... Location.
Whicker, Arnold & Ahler's No. 3 Garza, 150 ft. from SW line, 450 ft. from SE line, Blk. 1, Zerro Ranch Subd., Comitas grant ..... Rigging up.
J. H. Winch's No. 3 A. Bustamente, 750 ft. NW line, 150 ft. NE line, Blk. 7, Share 5, Fansler Partition, Comitas grant ..... T. D. 1,325 ft.; drlg.

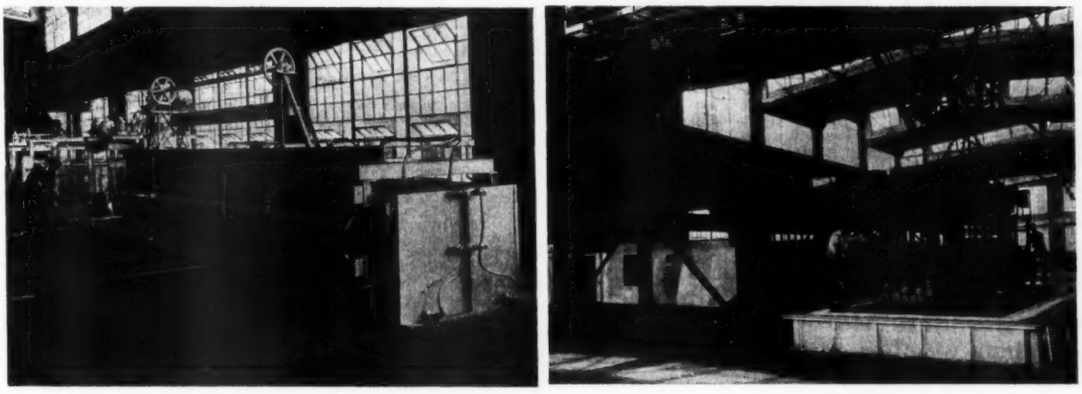
JENNINGS-CUELLAR POOL—ZAPATA COUNTY

O. W. Killam's No. 37-C Cuellar, 150 ft. N line, 1,775 ft. SW line of Sur. 278 ..... T. D. 1,430 ft.; drlg.
O. W. Killam's No. 36-B Cuellar, 150 ft. S line, 1,630 ft. SW line of Sur. 277 ..... T. D. 1,588 ft.; drlg.

MIRANDO VALLEY POOL—ZAPATA COUNTY

O. W. Killam's No. 1 Killam, 875 ft. NE line, 2,080 ft. SE line of Sur. No. 16 ..... T. D. 1,926 ft.; standing.

All-Electric heat-treating equipment contributes to Bethlehem the excellence of Steels



At left, pre-heating chamber of the roller-hearth furnace, and at right two electrically heated pit annealing furnaces, showing charge being lowered into one.

ALL-ELECTRIC heat-treating equipment has been recently installed in the alloy steel plant at Bethlehem, greatly increasing the accuracy and uniformity of the heat treatment of Alloy and Special Steels.

Regardless of what a manufacturer's requirements may be in the line of alloy, special or corrosion-resisting steels Bethlehem can supply the right steel for the task. Constant research and improvement in methods of manufacture enable Bethlehem not only to keep abreast of the rapidly-changing requirements of steel consumers, but in many cases to anticipate these requirements and open the way for making finer products by offering better and more easily worked steels.

Bethlehem alloy, special and corrosion-resisting steels are made with extremely careful attention to the details of manufacture under the supervision of men of long experience, in plants equipped with every modern facility, of which the heat-treating plant mentioned above is an example.

Whatever you need in steel—strength, endurance, resistance to corrosion, heat, wear, shock or fatigue—you will find a Bethlehem steel for the job.

BETHLEHEM STEEL COMPANY
General Offices: Bethlehem, Pa.

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Buffalo, Pittsburgh, Cleveland, Cincinnati, Detroit, Chicago, St. Louis

Pacific Coast Distributor:
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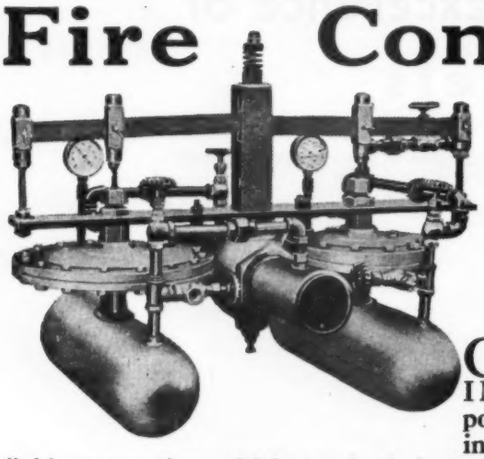
OUTSTANDING SPECIAL-PURPOSE STEELS MADE BY BETHLEHEM ARE MAYARI NICKEL-CHROMIUM STEELS, BETHALON AND OTHER CORROSION-RESISTING STEELS, SUPERTEMP AND RESILIA.

BETHLEHEM Alloy, Special & Corrosion-Resisting STEELS

.....Badgett's New Automatic Fire Control



CONFORMING with our policy of supplying reliable oil field accessories, which are both inexpensive and economical of operation, we offer our new automatic Gas Fire Control.

This Control is easy to install and inexpensive to operate and earns its original cost many times over in the saving of fuel and elimination of breakdown troubles.

Like all other Badgett products, this new Gas Fire Control is guaranteed. It works accurately on variation of gas pressure from 5 to 300 pounds, and is easily changed for any burner pressure by merely opening a needle valve, allowing the pressure to reach the desired point. The control is operated on gas until the desired steam pressure is reached when it automatically switches over to the steam side. The Badgett Gas Fire Control operates so perfectly that the steam pressure will not vary more than 2 to 4 pounds on drilling rigs. The diaphragm is built to withstand 600 pounds working pressure.

If you want to save boiler troubles, time, money, why not wire or telephone your supply house today to send you one or more Badgett Automatic Gas Fire Controls?

We can supply the New Automatic Gas Fire Control in either 2" or 3", single or double control. We recommend the single control be used only where the gas pressure does not vary in the line.

Southern Drilling Co., Oklahoma City
John Mabee, Tulsa
Loffland Bros., Tulsa
J. Henry, Duncan, Okla.
Summit Drilling Co., Tulsa
G. J. Beard, Duncan, Okla.
Hubbard & Wofford, Tulsa
Herman Wagener, Oklahoma City
Byers Drilling Co., Oklahoma City
A & B Drilling Co., Oklahoma City
Capitol Drilling Co., Oklahoma City
Prince & Prince, Electra, Texas
Clark & Cowden, Duncan, Okla.
Independent Oil Co., Oklahoma City
G. E. Gilberth, Oklahoma City
Golden & Cochran, Wink, Texas
Haynes Drilling Co., Wink, Texas
Murphy & Graham, Seminole, Okla.
Steinberg & Yerkee, Seminole, Okla.
Fain-McGaha, Wichita Falls, Texas
Alleson & Clevinger, Seminole, Okla.
Winkler & McQueen, Duncan, Okla.
Reynold Drilling Co., Seminole, Okla.
Manahan Drilling Co., Seminole, Okla.
Herndon Drilling Co., Seminole, Okla.
Hartman & Hamilton, Seminole, Okla.

You are not obligating yourself when you write for details.

Sold through leading supply houses in the Mid-West and through the National Supply Co. in the State of California.

BADGETT STEAM LUBRICATOR COMPANY

CHICKASHA, OKLAHOMA

GULF COAST FIELDS AND WILDCATS

(Continued from Page 51)

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 27 Wisdom ..... Total depth 5,662 ft.; sidetracking hard rock 5,364 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 100-A Cotton ..... To pump 539 ft.
Rio Bravo Oil Co.'s No. 104-A Cotton ..... Drlg. shale and lime 580 ft.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 68 McFaddin (workover) ..... Drlg. hard sand and lime 4,111 ft.
Yount Lee Oil Co.'s No. 117 McFaddin (workover) ..... Drlg. shale and lime 5,156 ft.
Yount Lee Oil Co.'s No. 143 McFaddin ..... Abandoned 6,654 ft.

NORTH DAYTON—LIBERTY COUNTY

Harrison & Abercrombie's No. 1 Blewett ..... Drlg. gumbo 2,512 ft.
Harrison & Abercrombie's No. 1 Jones ..... Total depth 4,625 ft.; sidetracking 4,179 ft.
Harrison Oil Co.'s No. 4 Quintette (workover) ..... Total depth 6,077 ft.; sidetracking in hard shale 4,210 ft.

HIGH ISLAND—GALVESTON COUNTY

Gulf Prod. Co.'s No. 10 Smith ..... Drlg. sticky shale 6,021 ft.
Marrs McLean's No. 12 Cade (workover) ..... Drlg. hard sand and lime 4,469 ft.
Marrs McLean's No. 19 Cade ..... Estimated 1,000 000 ft. of gas on ½-in. choke 3,913 ft.
Marrs McLean's No. 20 Cade ..... Rig standing.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 27 Moore ..... Oil sand 3,537 ft.; set 7-in. csg. 3,510 ft.

HULL—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 25 Barngrover ..... Rig.
The Texas Company's No. 1 Barrow fee ..... Drlg. gumbo 2,349 ft.
The Texas Company's No. 4 Barrow ..... Rig.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 1 Grimm ..... Shale 1,260 ft.; cmtd. 6⅝-in. csg. 1,180 ft.
Sun Oil Co.'s No. 4 Janner ..... Drlg. rock 3,395 ft.
Sun Oil Co.'s No. 1 Freeman ..... Drlg. anhydrite 2,840 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Oil Co.'s No. 3 Davis (workover) ..... Rigging up to work over.
Cranfill-Reynolds Oil Co.'s No. 5 Esperson ..... Drlg. sand and shale 6,238 ft.
Cranfill-Reynolds Oil Co.'s No. 1-C Kirby fee ..... Total depth 3,443 ft.; sidetracking in shale 3,380 ft.
Yount Lee Oil Co.'s No. 3 Moore's Bluff ..... Total depth 7,836 ft.; set screen 2,776 ft.; sanded.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 1 Essel ..... Drlg. hard sand 6,591 ft.
Gulf Prod. Co.'s No. 10 Boyt ..... Set 1 jt. screen 3,944 ft.; comp. flowing 910 bbls. net oil, 35% water, ½-in. choke, 300 lbs. pressure.
Gulf Prod. Co.'s No. 11 Boyt ..... Location.

BOLING—WHARTON COUNTY

C. S. Thomas' No. 1 Voiney ..... Standing shale 535 ft.

REFUGIO—REFUGIO COUNTY

Brookins et al's No. 1 Kay ..... Shut down 4,320 ft.
Houston Oil Co.'s No. 15 Pratt-Hewitt-Rooke ..... Sand, shale and lime 977 ft.; set 13⅜-in. casing 551 ft.
Houston Oil Co.'s No. 4 Mrs. M. H. Ryals ..... Rigging up.
Houston Oil Co.'s No. 13 F. V. W. Heard ..... Spudding.
Houston Oil Co.'s No. 1 Rooke ..... Hard sandy shale 6,174 ft.; drill stem stuck.
Houston Oil Co.'s No. 2-A Fannie Heard ..... Oil sand 6,443-59 ft.; drlg. plug.
Houston Oil Co.'s No. 1 Doughty ..... Total depth 6,458 ft.; reamed to bottom.
Houston Oil Co.'s No. 1 Tom Heard ..... Set 3-in. liner and 20 ft. screen 6,467 ft.
Houston Oil Co.'s No. 1 O'Connor ..... Total depth 5,913 ft.; swabbed to 4,000 ft.; show of oil.
Houston Oil Co.'s No. 1 Carlisle, Blk. 33 ..... Rebldg. derrick to deepen 3,717 ft.
Ed. Jones' No. 1 Kelly, Blk. 106 ..... Drlg. shale and broken lime 3,605 ft.
Luling Oil & Gas Co.'s No. 1 J. W. Kay ..... Total depth 4,923 ft.; sand 3,729-30 ft.; coring ahead.
Luling Oil & Gas Co.'s No. 1 City, Blk. 105 ..... Sandy shale 1,310 ft.; set 12½-in. casing 1,190 ft.
Moody-Seagraves-Karona's No. 1 F. Hayser ..... Drlg. shale and lime 4,829 ft.
Moody-Seagraves Prod. Co.'s No. 6 Morgan-O'Connor .... Location.
Moody-Seagraves and Phillips Pet. Co.'s No. 3-B J. F. B Heard ..... Drlg. gumbo and shale 2,120 ft.
Moody-Seagraves' No. 1-A O'Brien ..... Spudded.
Moody-Seagraves Prod. Co.'s No. 3 O'Brien ..... Drlg. shale and lime 5,354 ft.
Moody-Seagraves and Phillips Pet. Co.'s No. 1-C J. F. B. Heard (Independent) ..... To swab 6,443 ft.
Nichols Oil Co.'s No. 1 Wood ..... Drlg. hard sand and lime 3,660 ft.
Pearson Properties, Inc.'s No. 1 Hornburg ..... Derrick.
Saxet Oil Co.'s No. 1 L. H. Johnson, Blk. 11 ..... Location.
Saxet Oil Co.'s No. 1 Fox heirs (workover) ..... Total depth 3,963 ft.; shut down.
Sun Oil Co.'s No. 3 Rea ..... Total depth 3,654 ft.; set 9⅝-in. casing 3,644 ft
L. L. Smith's No. 2 Rogers, James Power Sur. ..... Total depth 3,641 ft.; set 9⅝-in. casing 3,639 ft.; running tubing.
L. L. Smith's No. 1 L. M. Rogers, Blk. 87 ..... Cmtd. 9⅝-in. casing 5,576 ft.
Traylor, Rutherford & Traylor's No. 1 Rogers heirs, James Powers Sur. ..... Gumbo 1,503 ft.; set 12½-in. casing 692 ft.
The Texas Company's No. 2 Shelton (workover) ..... Total depth 6,612 ft.; estimated 50,000,000 ft. wet gas; tubing pressure 2,100 lbs.; commencing to show oil.
United Prod. Corp.'s (Union) No. 11 Fannie Heard ..... Total depth 3,743 ft.; gas well.
United Prod. Corp.'s (Union) No. 12 Fannie Heard ..... Location.
United Prod. Corp.'s (Union) No. 2 Moss-Powers, Blk. 109. Derrick.
United Prod. Corp.'s (Union) No. 5 O'Brien (workover)... Pulling liner to deepen 5,432 ft.
United Prod. Corp.'s (Union) No. 7 O'Brien, Blk. 85..... Drlg. gumbo and lime 1,824 ft.
United Prod. Corp.'s (Union) No. 8 O'Brien ..... Location.
United Prod. Corp.'s (Union) No. 5 Powers ..... Total depth 6,458 ft.; set 5 3/16-in. casing 6,450 ft.
United Prod. Corp.'s (Union) No. 7 Powers ..... Location.
United Prod. Corp.'s (Union) No. 8 Powers, Blk. 82 ..... Drlg. sticky shale 1,930 ft.
United Prod. Corp.'s (Union) No. 6 Nancy J. Ryals ..... Pulling stuck drill stem 660 ft.
United Prod. Corp.'s (Union) No. 1 Rose Lambert ..... Location.
United Prod. Corp.'s (Union) No. 1 Shelton ..... Drlg. hard sandy lime 4,264 ft.
United Prod. Corp.'s (Union) No. 1 J. Shay ..... Location.
United Prod. Corp.'s (Union) No. 3 Mitchell (workover).. Total depth 6,458 ft.; drlg. plug.
United Prod. Corp.'s (Union) No. 5 Mitchell ..... Drlg. sand, shale and lime 4,351 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 1 Martha Moss ..... Total depth 7,119 ft.; sand showing oil and water 6,611 ft.; to test.
Union Sulphur Co.'s No. 2 Martha Moss ..... Location.
Vacuum Oil Co.'s No. 9 Bordages ..... Rigging up.
Vacuum Oil Co.'s No. 8 Farquahar ..... Drlg. gumbo 3,449 ft.
Vacuum Oil Co.'s No. 12 Miller (workover) ..... Oil sand 4,391-96 ft.; bailing; showing some oil 3,100 ft.
Vacuum Oil Co.'s No. 28 Miller ..... Total depth 5,623 ft.; sidetracking sand showing oil 3,709 ft.; to set 7-in. casing.
Vacuum Oil Co.'s No. 30 Miller ..... Total depth 4,350 ft.; to reset screen.
Vacuum Oil Co.'s No. 31 Miller ..... Rigging up.

EDGERLY—CALCASIEU PARISH

Rex Petroleum Co.'s No. 13 Hunter ..... No report.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 21 Watkins (workover) ..... Oil sand 4,073-87 ft.; to test.
Calcasieu Oil Co.'s No. 23 Watkins ..... Total depth 2,944 ft.; set 1 jt. screen; comp. flowing 1,270 bbls. pipe line oil, ¼-in. choke, pressure 225 lbs.; gravity 23.2.

Calcasieu Oil Co.'s No. 25 Watkins ..... Derrick.
Calcasieu Oil Co.'s No. 9 Valery ..... Drlg. gumbo 3,045 ft.
R. E. Seiss' No. 2 J. M. Vincent ..... Shut down 510 ft.
The Texas Company's No. 8 State ..... Location.
Yount Lee Oil Co.'s No. 34 State ..... Location.
Yount Lee Oil Co.'s No. 36 State ..... Location.
Yount Lee Oil Co.'s No. 37 State ..... Location.
Yount Lee Oil Co.'s No. 38 State ..... Location.
Yount Lee Oil Co.'s No. 39 State ..... Location.
Yount Lee Oil Co.'s No. 40 State ..... Total depth 2,908 ft.; comp. flowing 1,100 bbls., 1.2% water, 21.8 gravity, ½-in. choke, pressure 210 lbs.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 9 Housierre Latrielle ..... Sand showing gas and oil 8,653 ft.; fishing stuck drill stem.

VINTON—CALCASIEU PARISH

Gulf Ref. Co.'s No. 4 Gardner (workover) ..... No report.
Gulf Ref. Co.'s No. 5 Gardner ..... No report.
Gorbat Oil Co.'s No. 1 Clement Lyons ..... Total depth 4,040 ft.; no report.
Vinton Pet. Co.'s (Lucky Ten) No. 1 Lizzo ..... Total depth 3,326 ft.; pulling screen to deepen.
Wilson-Broach's No. 5 Wilson ..... Comp. flowing 650 bbls. 3,150 ft.

BAYOU BOUILLON—ST. MARTIN PARISH

Humble Oil & Ref. Co.'s No. 1 Woodyard Lake ..... Total depth 6,061 ft.; sidetracking 4,636 ft.
Humble Oil & Ref. Co.'s No. 4 State ..... Cavity 4,477 ft.; cutting and pulling stuck drill stem.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 10 Yount Lee ..... Drlg. tough gumbo and lime 4,728 ft.

PORT BARRE—ST. LANDRY PARISH

Gulf Ref. Co.'s No. 4-A Hoskins ..... Rigging up.
The Texas Company's No. 9 Botney Bay ..... Location.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Arkansas Natural Gas Co.'s No. 1 Machemehl ..... Shale 1,066 ft.; set 10-in. casing.
Empire Gas & Fuel Co.'s No. 1 Kuntze, San Felipe ..... Drlg. hard shale 5,370 ft.
O'Hara et al's No. 1 Schrader ..... Drlg. shale 2,840 ft.
H. R. Flannigan's No. 1 Dietrich ..... Total depth 976 ft.; estimated 30,000,000 ft. of gas, 400 lbs. pressure.

BRAZORIA COUNTY

The Texas Company's No. 1 Ewin, Harvey Little Sur. .... Fishing drill stem 7,586 ft.
The Texas Company's No. 1 J. H. Murdock, Fresno ..... Reaming 7,312 ft.
Mills Bennett Prod. Co.'s No. 2 Reece, Allen ..... Drlg. anhydrite 2,504 ft.
Mills Bennett Prod. Co.'s No. 2 Random, Allen ..... Drlg. hard shale 2,095 ft.
Faust et al's No. 5 Faust ..... Drlg. sand and lime 5,950 ft.
Feeport Sulphur Co.'s No. 2,001 fee, Bryan Heights ..... Total depth 4,261 ft.; sidetracking shale 4,145 ft.; set 9⅝-in. casg
Freeport Sulphur Co.'s No. 4 Seaburn ..... Drlg. shale 650 ft.
Freeport Sulphur Co.'s No. 5 Seaburn ..... Rig.
Layne et al's No. 7-A Wisdom, Damon Mound ..... Drlg. lime and shale 2,735 ft.
Rycade Oil Corp.'s No. 2 Seaburn, Stratton Ridge ..... Drlg. water sand 5,395-5,401 ft.
Steel & Strickland's No. 1 Lockbridge ..... Spudded and shut down.
United Oil Syndicate's No. 1 Speer, A. A. Talmadge Sur... Water sand 576 ft.; shut down.

BURLESON COUNTY

Mid-South Oil Co.'s No. 1 Duckworth ..... Shale 2,440-2,510 ft. showing gas and oil.

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence ..... Shut down 5,020 ft.
Shell Pet. Corp.'s No. 2 Herff, Moss Bluff ..... Coring hard lime rock 6,084 ft.

COLORADO COUNTY

A. H. Eaton et al's No. 1 A. R. Surcek ..... Drlg. gumbo 775 ft.

FORT BEND COUNTY

Long Point Oil Co.'s No. 1 Texas-Gulf fee, H.&T.C. Sur... Drlg. gumbo 465 ft.

GRIMES COUNTY

Deering & Noble's No. 1 Templeton, 6 miles south of Navasota ..... Shut down in shale 3,521 ft.

HARDIN COUNTY

D. O. Speight's No. 1 fee, near Batson ..... Shut down 3,010 ft.

HARRIS COUNTY

Cypress Oil & Development Co.'s No. 2 Kitzman ..... Drlg. shale 4,126 ft.
Gulf States Oil Co.'s No. 1 Angsperger ..... No report.
Humble Oil & Ref. Co.'s No. 1 Gehring, Mykawa ..... Drlg. hard sand 3,662 ft.
Humble Oil & Ref. Co.'s No. 4 Minnetex, Mykawa ..... Drlg. sandy shale 4,972 ft.
Sloane Prospecting Co.'s No. 1 Wasova ..... Abandoned in blue shale 5,559 ft.
W. C. Turnbow et al's No. 1 Miller, Arthur McCormick Sur. ..... Abandoned 6,354 ft.

JACKSON COUNTY

Chicago-Gulf Co.'s No. 8 Drushell, Edna ..... Shut down 3,870 ft.
Chicago-Gulf Co.'s No. 1 Rogers (workover) ..... Rigging up.
Chicago-Gulf Co.'s No. 2 Lee ..... Sand showing gas 4,147 ft.; to set casing.
Warner-Quinlan's No. 1 Hungerford, Henry Smith Sur.... Rigging up.

JEFFERSON COUNTY

Humble Oil & Ref. Co.'s No. 1 McFaddin, T.&N.O. Sur. 234. Rigging up.
Keith et al's No. 1 Reed-Hankamer ..... Drlg. gumbo 1,656 ft.
The Texas Company's No. 4 Pipkin, Big Hill ..... Drlg. gumbo and boulders 4,125 ft.

LIBERTY COUNTY

Gulf Prod. Co.'s No. 3 McFaddin, Moss Bluff ..... Drlg. gumbo 479 ft.
Gulf Prod. Co.'s No. 1 MacDonald, Moss Bluff ..... Location.
Hamm et al's No. 1 Harvard, Davis Hill ..... Drlg. gumbo and lime 998 ft.
Humble Oil & Ref. Co.'s No. 2 Breeding, Moss Bluff ..... Location.
Humble Oil & Ref. Co.'s No. 1 Orlando Hylton, Moss Bluff ..... Abandoned 6,598 ft.
Humble Oil & Ref. Co.'s No. 7 Sterling, Moss Bluff ..... Building derrick.
J. R. Ingram's No. 1 Hornbeck, Clayton, Harper Sur. .... Rig.
Tucker et al's No. 1 Bell, H.&T.C. Sur. No. 4 ..... Drlg. clay 212 ft.

MATAGORDA COUNTY

H. C. Cockburn's No. 2 Hawkins, Shepherds Mott ..... Total depth 5,250 ft.; standing with casing collapsed at 3,100 ft.
Empire Gas & Fuel Co.'s No. 1 Boker, Citrus Grove ..... Sand and shale 6,295 ft.; set 46 ft. screen; tested salt water.

MONTGOMERY COUNTY

Lake Creek Oil Co.'s No. 1 Hunt, south of Conroe ..... Shut down 678 ft.; gumbo.
Price & Whitehead's No. 2 Guerges ..... Shut down 2,956 ft.

NACOGDOCHES COUNTY

E. L. Burk et al's No. 1 Latimer, Jose De Los Santos Sur. ..... No report.

ORANGE COUNTY

Gulf Production Co.'s No. 1 Miller Vidor Lbr. Co., E. Lewis Sur. No. 385 ..... Location.

POLK COUNTY

Sunshine Oil Co.'s No. 1 Collins, A. Viescha Sur. ..... Set 92 ft. 4½-in. screen 3,323 ft 150 ft. oil in hole; shut down waiting orders.

REFUGIO COUNTY

Blanco Oil Co.'s No. 1 Dorman ..... Shut down 3,120 ft.

SAN JACINTO COUNTY

E. P. Edwards et al's No. 1 Bennett, northwest of Cold Springs ..... Rig.

VICTORIA COUNTY

Newton et al's No. 1 West ..... Drlg. sand 1,550 ft.

WASHINGTON COUNTY

Penn-Tex Oil Co.'s No. 2 Kamas Brenham, S. M. Williams Sur. ..... Derrick.
Vegua Oil Co.'s No. 1 P. Graves, S. Clamost Sur. ..... Derrick.

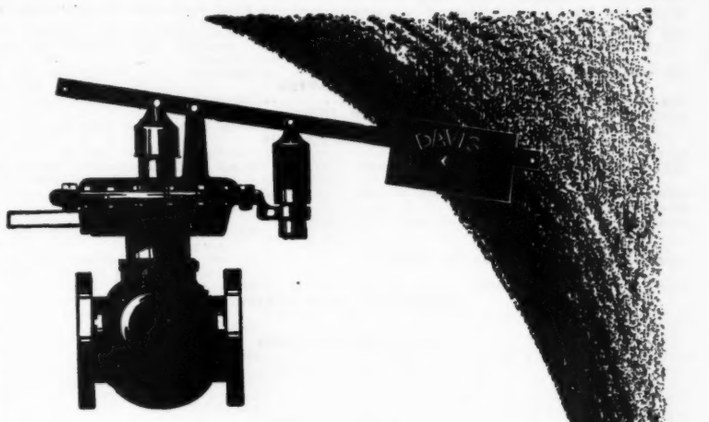
SOUTH LOUISIANA

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w ..... Shut down 875 ft.
J. O. Davis' No. 1 Industrial, Sec. 29-9s-10w ..... Sticky shale 6,359 ft.; shut down.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w ..... Drlg. water sand 2,315 ft.
Dr. Thomas et al's No. 1 John Hewitt ..... Location.
Vacuum Oil Co.'s No. 1 Wait, Iowa ..... Drlg. sand and shale 3,718 ft.

CAMERON PARISH

Shell Petroleum Corp.'s No. 2 State, Black Bayou ..... Rigging up.
Shell Petroleum Corp.'s No. 16 Watkins, Black Bayou ... Sandy shale 1,913 ft.; set 13⅜-in. casing 1,819 ft.



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Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w ..... Total depth 5,171 ft.; sidetracking 3,600 ft.
The Texas Company's No. 6 State, Calcasieu Lake ..... Crystallized gyp 3,672 ft.; salt 3,-399-3,667 ft.; trying to fill cavity.
The Texas Company's No. 7 State, Calcasieu Lake ..... Location.

IBERIA PARISH

The Texas Company's No. 6 Vermillion Bay ..... Derrick.
Jefferson Lake Oil Co.'s No. 10 Lake Peigneur, Jefferson Island ..... Drlg. broken rock 1,564 ft.

IBERVILLE PARISH

Gulf Ref. Co.'s No. 1 Gay, Bayou Choctou ..... Coring hard sand 3,026 ft.
Shell Pet. Co.'s No. 5 Wilbert, White Castle ..... Sand, shale and calcite showing oil 5,210 ft.; pulling screen.
Standard Oil Co.'s No. 7 Wilbert, Bayou Blue ..... No report.
Standard Oil Co.'s No. 8 Wilbert ..... Drlg. rock 3,800 ft.
Standard Oil Co.'s No. 1 E. B. and S. P. Schwing, Bayou Blue ..... Sand 4,858-70 ft.; odor of oil; coring ahead.
Standard Oil Co.'s No. 3 Schwing (workover) ..... Gumbo, sand and shale 2,990 ft.; oil sand 2,968-85 ft.; will test.
Standard Oil Co.'s No. 1 Baist Cooperage, Bayou Blue.... Bldg. derrick.

JEFFERSON DAVIS PARISH

H. T. McClain et al's No. 1 Trimble Atterbury, Welsh, Sec. 16-9s-5w ..... Drlg. gumbo 2,523 ft.

PLAQUEMINE PARISH

Gulf Ref. Co.'s No. 2-B Buras Levee Board ..... Drlg. gumbo 530 ft.
Humble Oil & Ref. Co.'s No. 2 Cockrell-Moran, Lake Grand Ecaile ..... Total depth 3,225 ft.; shale.
The Texas Company's No. 4 State, Garden Island ..... Drlg. gumbo 4,382 ft.
The Texas Company's No. 5 State, Garden Island ..... Location.

ST. JAMES PARISH

Convent Oil Co.'s No. 2 Jacobs, Sec. 28-11s-4e ..... Total depth 1,834 ft.; trying to pull joint 3-in. screen.

ST. MARTIN PARISH

Harrison & Abercrombie's No. 1-A Barras, Sec. 66-11s-6e.. Derrick.
The Texas Company's No. 3 Iberville Land ..... Rigging up.
The Texas Company's No. 4 St. Martin, Hager ..... Derrick.
The Texas Company's No. 5 St. Martin, Hager ..... Drlg. shale 2,716 ft.

ST. TAMMANY PARISH

Washington-St. Tammany's No. 2 Cossack, Sec. 5-6s-10e.. Total depth 1,560 ft.; hard packed sand, mixing mud.

TERREBONNE PARISH

Paggi Brothers' No. 2 Evergreen ..... Total depth 1,800 ft.
United Prod. Corp.'s No. 9 Minor, Houma ..... Sand and shale 3,250 ft.; standing.
The Texas Company's No. 1 L.L.&E., Bay St. Elaine .... Derrick.
The Texas Company's No. 5 State, Bay St. Elaine ..... Cap rock 1,026 ft.
The Texas Company's No. 4 State, Caillou Island ..... Location.
The Texas Company's No. 6 State, Caillou Island ..... Location.
The Texas Company's No. 6 State, Bay St. Elaine ..... Location.
The Texas Company's No. 4 State, Dog Lake ..... Location.
The Texas Company's No. 2 La. L. & E., Bay Junop .... Hard sand and lime 6,835 ft.
The Texas Company's No. 6 State, Lake Barre ..... Location.
The Texas Company's No. 7 State, Lake Barre ..... Hard sand rock 2,592 ft.; reaming.
The Texas Company's No. 8 State, Lake Barre ..... Gumbo 1,153 ft.; reaming.
The Texas Company's No. 9 State, Lake Barre ..... Location.

VERMILLION PARISH

Pure Oil Co.'s No. 1 Southwest, Louisiana Land Co., Gueydan ..... Drlg. sand and gravel 819 ft.

WEST FELICIA PARISH

Putnam Syndicate's No. 1 Como Plantation, Sec. 51-1e-4w. Total depth 3,738 ft.; sidetracking sand and gumbo 852 ft.

LA.-ARK. FIELDS

(Continued from Page 42)

Co., SW NE, Section 31-8-12, in the Zwolle Townsite drilling, there were eight new locations made for tests in the various parts of the east and southeast extensions of the field. Essco Petroleum Co.'s No. 1 Louisiana Long Leaf Lumber Co., SW SW, Section 35-8-11, tested dry at 2,420 feet and at 2,600 feet and is shut down. No trace of the Zwolle chalk orders. Frank Melat, Inc.'s No. 2 Sabine Lumber Co., NE NW, Section 14-7-12, tested dry at 2,500 feet and has shut lown. No trace of the Zwolle chalk has been encountered.

The Farmerville wildcat area of Union Parish, Louisiana, which borders the Arkansas line, will be the scene of a test, Ouachita Natural Gas & Oil Co., Inc., having just made location for No. 1 Smith, 660 feet south and 1,224 feet west of northeast corner of Section 36-20-2.

S. C. Jeffus, trustee, who drilled a shallow wildcat in Clay County, Arkansas, which showed 1,000,000 feet of gas at 280 feet, has abandoned this test, No. 1 Underwood, NW SE, Section 4-20-8, at total depth of 330 feet. Ten-inch casing was set at 305 feet. The same operator has set 6-inch casing at 237 feet in No. 2 Underwood, which is a 58-foot north offset to No. 1 Underwood.

In the wildcat Franklin County district of Arkansas Red Bank Oil Co., which completed No. 1 Hamm, Section 33-10-26, at 3,750 feet as a 6,500,000-foot gasser last October and later went back into the hole and plugged back to 3,050 feet, is drilling sandy shale at 3,-788 feet after testing and estimated 8,-000,000 feet of gas at 875 pounds rock pressure from a sand 3,775-84 feet.

A. B. Turner, trustee's No. 1 Dave Brown, SE SW, Section 23-15-18, a wildcat in the general vicinity of the little Mount Holly Field of Ouachita County, Arkansas, cored top of the red beds at 2,700 feet and is drilling at 2,750 feet. The well is apparently checking high. The Nacatosh was topped at 1,663 feet.

Arkansas-Louisiana Pipe Line Co., after testing 1,000,000 feet of gas at 3,285 feet, has shut down at 3,310 feet in No. 2 McFadden & Brooks, NE SW, Section 15-9-21, a wildcat in Pope County, Arkansas.

Ozark Natural Gas Co. completed No. 1 Wright, NW NE, Section 29-8-30, Sebastian County, Arkansas, as a 6,000,000-foot gasser with 220 pounds rock pressure at depth of 2,930 feet. Ohio Oil Co.'s No. 10 Crain, SE SW, Section 1-17-14, Champagnolle, Union County, is pumping 500 bbls. of fluid daily at total depth of 3,010 feet from 25 feet of broken sand, only 2 per cent of the yield being oil.

In Cass County, northeast Texas, John C. Rogers has cored limey shale from 2,270-75 feet and claims a show of gas in No. 1 J. E. Lanier, K. E. Welborn Headright Survey. The same operator has spudded in a second test in that area. No. 1 W. Q. Henderson, William Davis Headright Survey, and shut down at 25 feet. This test is 5½ miles northwest of the town of Linden and is 1¼ miles from Cuestta.

Daisy Oil & Gas Co. has spudded a wildcat test in Panola County, Texas, on a block of several thousand acres. The test is No. 1 Rucks in the John Palmer Headright Survey. Knott and others' No. 1 Marion Dunham, Charles Haley Headright Survey, also in Panola County, tested 50,000 feet of gas with the hole later filling up with salt water and is now shut down at 2,888 feet. Natural Gas Products Co.'s No. 1 H. H. Alvord, a test for the Trinity in Panola County, and located in the B. X. Jordan Headright Survey, is drilling lime at 3,-525 feet.

MICHIGAN FIELDS

(Continued from Page 48)

contractor, T. K. Buzard, will drill the Missaukee, or Pioneer well.

Mount Pleasant Proration

The proration schedule established by the Pure Oil Pipe Line Co. in the Mount Pleasant area on September 4 has been suspended for the first 10 days of January, 1931, in order to fix a corrected potential production figure for the producing wells. The Pure company has been running only 60 per cent of the open flow capacity of wells completed before September 4, 1930, and 25 per cent of new wells completed since. Previous to the establishment of the present proration schedule the company had been running about 7,500 bbls. daily. This was cut to about 5,000 bbls. No announcement as to the future policy has been made.

Since the close of the navigation season on the Great Lakes about December 15 it has been necessary for the Pure Oil Co. to place most of its crude in storage at two tank farms, one in the Mount Pleasant Field and the other at the Bay City dock at the eastern terminal of the company's new 40-mile pipe line laid this year. The company has about 440,000 bbls. of storage in the field in eight 55,000-bbl. tanks and about double this amount in similar tanks at the Bay City dock.

Seeking Marshall Gas

Three wildcats in the vicinity of the group of successful dry gassers in the Marshall formation in Broomfield Township, Isabella County, are being watched as they are expected to indicate the possible extent of the gas field from which the Consumers Power Co. hopes to supply Mount Pleasant and other central Michigan cities with natural fuel within the next six months. The three wells are as follows: The Pure Oil Co.'s No. 2 Stanley E. Willie and others, C SW NE, Section 4-14n-6w, Broomfield Township, Isabella County; Geneva Oil Corp.'s No. 1 Nicholson, SW SW, Section 7-14n-5w, Deerfield Township, Isabella County, and the Benedum-Trees Oil Co.'s No. 1 Brand, NW NW SE, Section 24-15n-7w, Sheridan Township, Mecosta County.

The Geneva-Nicholson well drilled into an initial flow of about 1,000,000 feet of gas in the Marshall at 1,365-75 feet some time ago but the well did not hold up. It will be deepened a few feet in hopes of an increase. Drilling on the other two wells had not reached a depth sufficient to be any indicator of gas possibilities.

SOUTHWEST TEXAS FIELDS

(Continued from Page 40)

wards west of San Antonio is too lacking in porosity to ever produce much oil.

Jim Hogg Wildcat

Another wildcat that has possibilities is the Cole Petroleum Co.'s No. 1 Wilbur Allen in Jim Hogg County east of the Randado Pool. Total depth is 3,186 feet and while the drill stem test showed considerable mud with the oil the showing warranted setting casing and 6⅝-inch casing has been set at 3,170 feet. Production in the Randado Pool is at 1,300 feet. This wildcat is some distance from that pool and has no connection with it. Since the Cole Petroleum Co. brought in the pools to the north in Webb and Duval Counties it has done no wildcatting until recently, having put all its time on the development of that acreage. This No. 1 Wilbur Allen is the second wildcat test drilled by the company since. It is now waiting on cement to set.

Laredo District

The Texas Company completed its No. 5-A Guerra in southwestern Starr County, 4 miles north of Roma after plugging back from 3,840 feet to 3,641 feet, and setting casing at 3,441 feet. It made a small gas well with 750 pounds pressure but small volume and is rather disappointing. The Texas Company a year ago completed No. 4-A Guerra a half mile or so north of this for a small oil well at about the same depth, and during the past year has drilled three or four other tests on the big block of leases but with no production resulting except this small gas well.

There was one other producer completed in the Laredo district the past week. It was the Magnolia Petroleum Co.'s No. 4 Benavides in Survey 174 in the O'Hern-Seacord Pool at 2,848 feet after plugging back from 2,862 feet. It came in for 5,000,000 feet of gas. Production in the Cole Pool lying to the north is at around 1,700 feet, though some deeper production at around about the depth of the No. 4 Benavides was discovered the past year just north of Survey 174.

There were two disappointments registered in the Laredo territory during the week. Magnolia Petroleum Co. abandoned its No. 1 Edge-Hall a couple of miles northeast of the Schoolfield-O'Byrne Pool in northern Duval County at 4,982 feet. It had a showing at 2,386 feet, which is only a little deeper than production in the Schoolfield-O'Byrne Pool and it had been hoped it would pick up the line of production and extend the pool but it failed to do it or to find deeper producing sands either.

Another disappointment was O. W. Killam's No. 2 Slator in the north central part of Zapata County abandoned at 2,135 feet. No. 1 Slator was also a dry hole. He is rigging up on No. 3, which is evidence that he has not abandoned the acreage though he has the No. 2 hole.

Other Completions

Other completions in southwest Texas worthy of notice are Moody-Seagraves' No. 1 F. J. Smith in Nueces County with casing set at 4,074 feet and total depth 4,100 feet. It is a gas well with 1,700 pounds pressure and is in the Saxet Field where production regularly is at around 2,400 feet.

William F. Morgan and Independent Oil & Gas Co.'s No. 1 Quincy in Bee County, a wildcat that at one time attracted a lot of attention, was abandoned at 6,028 feet.

Miscellaneous Wildcats

Shell Petroleum Corp. is to run casing in the Penn Oil Co.'s No. 1 Junker at total depth 5,490 feet. Top of Jackson 3,200 feet.

Prairie Lea Production Co.'s No. 1 Oppenheimer in Jim Wells County, which spudded in and then shut down, has resumed drilling.

CALIFORNIA FIELDS

(Continued from Page 47)

troleum Securities abandoned No. 1 Johnson-Moss, a wildcat in Section 14-29-29, and this lease is being quitclaimed. The Petroleum Securities picked up the top of the Vedder zone in this well at 4,125 feet but this horizon, which has been productive in other parts of the San Joaquin Valley, was barren. The bit was subsequently carried down to 4,-242 feet before abandonment in order to furnish a conclusive test.

The Rio Grande Oil Co. also listed a wildcat for abandonment during the past week and, while some favorable oil and gas showings were encountered, commercial production was not developed up to the conclusion of drilling at 3,680 feet. This wildcat, located east of the Belridge Field of Kern County in Section 18-28-22, was abandoned primarily because of mechanical trouble resulting from the loss of several hundred feet of drill pipe. The Rio Grande is not entirely satisfied that this area is barren and preparations are being made to either drill a new well or sublease a portion of its holdings to another operator. H. A. Bardeen has decided that the San Emidio section of Kern County, and particularly that area in Section 10-10-23 is not so hot from an exploration standpoint and has accordingly abandoned his second test in that area as a duster at 4,368 feet. This well showed some favorable indications during the course of work but did not have sufficient sand to result in commercial production. In the southern part of the State, the Shell Oil Co. has abandoned No. 1 Van Nuys as a dry hole at 6,005 feet. This test, located in Section 19-2-15, did not show any encouragement from the grass roots down and its abandonment therefore did not come as a surprise.

Lost Hills-Belridge

The Universal Consolidated's No. 49, which has picked up the Temblor in the Lost Hills Field of Kern County, tested wet for a second time at 4,911 feet and another cement job will be necessary. This well has cored oil sand in the bottom of the hole and is believed to have an excellent chance of developing commercial production if the water trouble which has been holding up progress can be successfully overcome. The Richfield Oil Co.'s deep test in the North Belridge Field of Kern County has already passed the 6,250-foot level and, because of its depth, has taken on a very doubtful aspect. Correlation work indicates the possibility that this well is located outside

the productive limits of the field. None of the other wells under way in this field at the present time is deep enough to pick up the pay and it will probably be another several weeks before the trend of the structure and scope of the field is determined. The Union Oil Co. has started its second test in the North Belridge Field and spud will probably be made some time within the next 15 days.

The Shell Oil Co. is getting ready to spud in No. 1 Morris, a new well in the Weed Patch Field of Kern County, and this project, which is an offset to the Mohawk Oil Co.'s drilling project in Section 32-30-29, will be making footage soon. The Shell already has two drilling projects under way in the Weed Patch area, one of which, No. 1 Porter Day in Section 29-30-29, has already proven up the existence of two separate and distinct zones. This project is at the present time being carried on down for a deep conclusive test, the bit being down 6,675 feet a few days ago. The Cities Service Petroleum Co. is expected to complete work on its first core hole which is being drilled as a structure survey test some time within the next 15 days. The company contemplates drilling a wildcat in this area, provided additional structure survey work is favorable. The Associated is reaming its wildcat in the Jacalitos Hills but it is expected that drilling will be resumed at 3,590 feet in the near future. Drilling operations in the Porterville district, where a number of shallow tests have been drilled during the past six months, are at a standstill. The inability to develop commercial production due to water trouble and the absence of a sufficient thickness of oil sand is the reason for this suspension of work. The Shell Oil Co.'s wildcat in the Semitropic Ridge district of Kern County is rotating ahead in a hard gray sand at 8,870 feet and, while several showings have been encountered, none of them was deemed of sufficient importance to warrant a production test. The Western Gulf Oil Co., which is drilling an important wildcat in the Santa Maria district of Santa Barbara County, is drilling ahead in a brown shale at 4,965 feet. In the Orella district of Santa Barbara County independent operators are reported to have leased up several hundred acres of prospective oil land. In the Capitan Field, two wells are being watched with interest. These are the General Petroleum's No. 8 Erburu, a deep test, and the Prairie Oil & Gas Co.'s No. 1 El Capitan, which has just passed the 1,000-foot level. In the Goleta area the General Petroleum is rotating ahead in No. 3 More in a brown shale showing heavy gas at 3,815 feet. Two gas wells have already been finished in this field by the General Petroleum, but, since the company is wildcatting for oil instead of gas, No. 3 is being carried down for a deep test.

OKLAHOMA FIELDS

(Continued from Page 34)

pipe line companies in December. Only five operating companies in the Oklahoma City Field are even with proration allowances in their production. Twenty-five companies are over the limit fixed by the proration order and the remainder are underproduced.

The salty geyser in the Oklahoma City Field was brought under control early in the week. The well was the Indian Territory Illuminating Oil Co.'s No. 1 Emerson-Joyce, NE cor., Section 25-11-3w, the south offset to the discovery well in the field. It blew wild for 50 hours before being shut in, flooding the countryside with salt water. While blowing wild the well was estimated to be making 40,000,000 feet of gas a day and several hundred barrels of water an hour. It was an old oil producer at 6,364 feet and was plugged back to 5,545 feet. The well got beyond control while the crew had the tools in the hole attempting to rip the casing. Some express the opinion the salt water will kill the gas flow making it unnecessary to mud off the gas.

On January 3 the proration plan in the Oklahoma City Field was changed from time proration to the percentage plan, under the order signed by the Oklahoma Corporation Commission. The change in the curtailment of the oil production in the Oklahoma City Field was provided in the general order prorating the entire State. Field Umpire Bradford, immediately began taking potentials of the wells in the field and fixing the allowable flows. The change in the method of producing the wells was approved by the operators several weeks ago at a mass meeting. The new plan is the same that is being used in Greater Seminole area and some of the other flush fields in the State.

Federal land is being offered for lease in the north end of the Oklahoma City Field. The Department of the Interior is advertising for bids on oil and gas rights on two small tracts, the bids to be opened January 15 at the office of the United States Geological Survey.

One of the tracts is 0.06 acre in the extreme NW cor., Section 1-11-3w, and the other tract consists of 0.56 acre in the extreme SE cor., Section 35-12-3w. Both of the tracts are offset by producing wells of four companies. An agreement in the lease contract provides for a unit or community plan of operation on these tracts. The lessee must agree to unite with others in adopting and operating under a co-operative or unit plan of development or operation of the field whenever determined and certified by the Secretary of the Interior.

Oklahoma City Production

The following wells were on production during the seven days ending December 29, in the Oklahoma City Field, under proration orders. All other completed wells were shut in and will be opened and produced according to the curtailment plan.

Company and farm—	S-T-R	Wells	Bbls.
Anderson-Prichard:			
Gibbons	1-11-3	4	39
Graham	2-11-3	1	78
Key	2-11-3	1	222
Moore	2-11-3	1	88
Roosevelt Place	2-11-3	5	1,035
Brown et al	14-11-3	1	296
Blackstock et al:			
Harvey	15-11-3	1	287
Blackwell:			
Community	10-11-3	1	76
British-American:			
Eckroat	10-11-3	1	753
Capitol:			
Campbell	2-11-3	1	1,817
Coline:			
Warren	18-11-2	8	154
Continental:			
Sudik	6-10-2	4	352
Cromwell-Franklin:			
T. Park	13-11-3	31	4,266
Dengail:			
Schilling	10-11-3	1	559
Denver:			
Harvey	15-11-3	1	251
Empire:			
Gustine	1-11-3	1	23
Ghant-Garvin:			
Donaven	34-12-3	1	1,242
Harris	2-11-3	1	220
Mead	34-12-3	1	1,279
Hall-Briscoe:			
Holmes	10-11-3	7	1,702
Lindsey	14-11-3	3	131
Muller	2-11-3	1	528
Heenan-Coe:			
Cunningham	1-11-3	2	524
I. T. I. O.:			
Barker, Drake	14-11-2	1	159
Bod. Anderson	30-11-2	3	3
Bodine, A.	24-11-3	6	101
Borden	23-11-3	1	54
Brokaw, C.	13-11-3	4	510
Canfield, Butt.	19-11-2	3	29
Carrico	14-11-3	5	80
Coppinger	11-11-3	8	476
Corff	11-11-3	5	347
Drake	14-11-3	2	240
Emmerson, N.	30-11-2	11	189
Farley, L.	19-11-2	4	268
Ferndale, Comm.	11-11-3	5	837
Foster, Worley	24-11-3	1	66
Funk	11-11-3	1	205
George	7-11-2	1	41
Habegger	14-11-3	2	159
Hammer	11-11-3	2	36
Handl	11-11-3	1	88
Holmes-Gray	14-11-3	1	26
Huffman	14-11-3	2	95
Ivanhoe	15-11-3	2	141
Johnson	25-11-3	9	483
Jones, H. W.	1-11-3	4	627
Jones	31-11-2	14	3,483
Jones, Comm.	1-11-3	4	1,851
Knox, May	14-11-3	4	668
K. Henning	24-11-3	3	14
Lawrence Place	15-11-3	3	1,351
Lawton	11-11-3	1	75
Lemmon	11-11-3	4	154
Magnolia Heights	14-11-3	1	92
Mid-Texas	23-11-3	1	316
M. K. & T.	35-12-3	4	506
Mt. Vernon Heights	15-11-3	1	133
Okla. State Land	36-11-3	8	1,368
Pasadena Heights	14-11-3	4	476
Peterson, Sad	25-11-3	8	2,699
Phelans	15-11-3	2	88
Phillips	1-11-3	1	365
Precure, A.	11-11-3	1	175
Precure, E.	11-11-3	2	179
Rensimer	14-11-3	1	82
Reynolds	6-10-2	1	29
Salasman	32-11-2	5	48
Speegle et al	24-11-3	3	135
Spillman	14-11-3	3	306
Starkey	11-11-3	2	258
Sudik	31-11-2	11	2,075
Theimer, E.	12-11-3	8	826
Trosper	13-11-3	10	790
Trosper, Clar.	14-11-3	4	209
Trosper, C. E.	11-11-3	1	175
Trosper, E.	14-11-3	2	353
Trosper, H. G.	14-11-3	6	161
Trosper, L.	12-11-3	2	221
Trosper, Hughes	11-11-3	1	129
Unsell, M.	23-11-3	6	1,554
Unsell-Krager	23-11-3	3	1,877
Viewpoint	10-11-3	2	1,516
Waters	23-11-3	6	227
Warner, Farley	23-11-3	3	102
Wheeler	13-11-3	3	254
Wilkie-Ander.	25-11-3	3	11
Williams	23-11-3	1	161
Williamson, Can.	24-11-3	2	564
I. T. I. O. et al:			
Boulevard, Add.	14-11-3	1	46
Kedberg:			
Burss	2-11-3	1	177
Mabee:			
Rusty	10-11-3	1	1,671
Schilling	10-11-3	1	618
Mid-Kansas:			
Browning	18-11-2	2	17
Fortson	24-11-3	5	73
Mollman	23-11-3	4	297
Trosper, D. B.	19-12-1	1	175
Morgan:			
Stout	2-11-3	1	2,086
Phillips:			
Carey	2-11-3	1	135
Jones	1-11-3	1	72
Velt	2-11-3	1	491
Plains:			
Saddler	12-11-3	1	1,129
Prairie-Slick:			
Hiddleston	19-11-2	7	161
Sigmon	32-11-2	7	783
Shaffer et al:			
Vinita Park	2-11-3	2	226
Shell:			
Egermeir	23-11-3	1	107
Petty	30-11-2	7	33
Sinclair:			
School Land No. 54	36-11-3	16	2,641
School Land No. 67	36-11-3	4	266
Stamper	30-11-2	6	27
Venci	31-11-2	16	6,204
Sinclair-Amerada:			
Kinter	30-11-2	10	2
Sinclair:			
Donnell	23-11-3	1	173
School Land No. 69	36-11-3	3	565
Skelly:			
Dunn	1-11-3	1	955
Skelly et al:			
Dillon	2-11-3	2	317
Ainsworth	10-11-3	4	129
Hoops	31-11-2	8	861
Tanner	10-11-3	2	1,196
Slick, T. B.:			
Bailey	1-11-3	1	261
Campbell	3-11-3	2	3,262
Clegg	2-11-3	2	268
Daugherty	2-11-3	1	176
Dean	10-11-3	1	1,041
Foote	2-11-3	2	618
Frost, C. G.	10-11-3	1	85
Frost Heights	10-11-3	4	401
Gleason	1-11-3	1	198
Glidden	13-11-3	2	40
Thornton	15-11-3	1	276
Slick et al:			
Atkinson	1-11-3	2	624
Baker	1-11-3	5	813
Crawford	1-11-3	1	316
Danreuther	2-11-3	3	44
Dunivan	1-11-3	1	250
Page	14-11-3	2	36
Houghton	1-11-3	1	253
Miller	2-11-3	1	177
Milner	1-11-3	2	421
Storie	2-11-3	1	248
Carter	1-11-3	1	310
Hoops	31-11-2	8	881
Wirt Franklin:			
Lowery	12-11-3	10	1,945
Page	35-12-3	5	2,365
Shehan	2-11-3	2	75
Theimer	2-11-3	12	3,561
Wright-Smith:			
Smith	2-11-3	2	647
Total		676	88,435
Last week		673	85,760

New wells, 3. Increase, 2,675 bbls. Average per well for pool, 131 bbls.

Greater Seminole Production

The production from the Greater Seminole area for the week ending December 29 averaged 186,429 bbls. per day from 2,873 wells. The first 12 pools listed below comprise the Seminole Field, which averaged 124,986 bbls. a day from 1,880 wells.

Pool—	Wells	Bbls.
Little River	372	22,137
E Little River	84	10,252
Carr City	77	13,340
Maud	134	2,628
Mission	90	4,662
Bowlegs	279	12,139
Earlsboro	283	15,382
S. Earlsboro	28	6,675
E. Earlsboro	160	17,169
Seminole	256	12,864
E. Seminole	33	2,280
Searight	84	5,458
Total	1,880	124,986
Allen	276	12,965
Asher	26	804
Wanette	50	7,376
Konawa	108	15,526
Sasakwa	50	4,160
St. Louis	483	20,612
Total	2,873	186,429

The pipe line shipments from the Greater Seminole area totaled 170,156 bbls. for the week ending December 29. The daily average shipments by companies from the various pools were as follows:

Company—	Seminole (bbls.)	Asher, Pearson, St. Louis (bbls.)	Konawa (bbls.)
Barnsdall	1,362	....	....
Champlin	4,297	....	448
Consolidated	....	2,582	....
Cosden	5,987	....	2,264
Deep Rock	3,055	677	....
Empire	7,112	....	....
Gulf	11,124	2,753	....
Magnolia	7,044	4,270	2,676
Oklahoma	21,866	243	221
Ph'llips	576	....	....
Prairie	4,953	2,405	576
Prod. & Ref.	2,101	....	....
Pure	7,381	....	....
Shell	3,247	165	1,357
Stanolind	22,569	7,183	3,802
Texas	8,896	5,423	1,993
Tidal	10,151	3,546	....
Total	122,396	29,247	14,337
Tank cars	3,950	226	....
Grand total	126,346	29,473	....

Oklahoma City Shipments

The total crude oil shipments from the Oklahoma City Pool for the week ending December 29, were 103,965 bbls., an increase of 16,099 bbls. over the previous week. The daily average shipments were as follows:

Company—	Bbls.
Empire	16,985
I.T.I.O.	15,513
Magnolia	12,269
Oklahoma	11,007
Prairie	747
Stanolind	19,371
Sinclair	8,608
Shell	1,439
Tidal	4,092
Champlin	7,214
Century	1,871
Wilcox	4,849
Total	103,965

Carter County

Leonard Woodworth moved rig material in for No. 1 Brady, NW cor. SW SW, Section 32-1s-2w. F. W. Merrick's No. 1 McKee, SE cor. SW SW, Section 20-4s-2w, is a rig on the ground. Anderson and others' No. 7 Eaves, SW cor. NE SW, Section 24-1s-3w, has been completed for 600 bbls. in broken sands 2,327-2,543 feet.

Coal County

W. E. McCraw moved material in for No. 1 Stiring, NE cor. SE, Section 35-1-8.

Creek County

H. U. Bartlett has the rig up for No. 1-A Whitehead, SW cor. NE NW, Section 20-18-9. F. R. Billingslea's No. 1-A Wayman, NE cor. NW NW, Section 22-15-8, is drilling at 1,870 feet. The Prairie Oil & Gas Co.'s No. 3 Bryden, NW cor. SW, Section 31-15-8, has been abandoned at 3,887 feet in Wilcox sand.

Grady County

Badgett & Cooper's No. 2 Miller, NW cor. SW, Section 25-4-8w, has been completed for 14,000,000 feet of gas in sands 1,853-1,905 feet. Natural Gas Producing Corp.'s No. 1 Jolly, NW cor., Section 36-4-8w, has been completed for 19,000,000 feet of gas in sand 1,928-52 feet.

Hughes County

Erwin and others' No. 1 Jones, SE cor. NE, Section 30-5-10, has been abandoned at 4,776 feet.

Latimer County

Midwestern Oil & Gas Co.'s No. 1 Norris, C NW SE, Section 12-6-21, is a dry hole at 2,075 feet.

Lincoln County

Meade Brothers' No. 3 Meadville, C SW SW, Section 25-17-3, has been completed for 6,500,000 feet of gas in Bartlesville sand 3,975-4,016 feet.

Marshall County

Max Westheimer's No. 2 Davidson, SW cor. NE NW NW, Section 30-5s-6, has been deepened from 825 feet to 940 feet and abandoned.

McIntosh County

Brown & Brown's No. 1 Estos, SE cor. NE NW NW, Section 35-11-15, is dry and abandoned at 1,146 feet.

Muskogee County

Rose and others' No. 3 Howard, NE cor., Section 30-15-16, is dry and abandoned at 1,900 feet after being deepened from 1,750 feet. J. E. McQuown's No. 1-A Smith, NE cor. SW NW NW, Section 6-14-19, has been abandoned at 550

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feet. Moore & Crow's No. 1 Hood, C SE SW, Section 31-12-19, made 500,000 feet of gas in sand 740-45 feet.

Okfuskee County

Kingwood Oil Co.'s No. 1 Jacobs, SE cor. NE NE, Section 21-12-11, has been abandoned at 3,540 feet.

Oklahoma County

Don Leon and others' No. 1 Burt, Block 2, Lot 9, Chapin & Levy Addition, SW cor. NE NW NW, Section 10-11-3w, is a cellar. Argood and others made location for No. 1, Block 11, Fruitland Addition, SE cor. NW SE SE, Section 15-11-3w. Indian Territory Illuminating Oil Co. and others' No. 4 E. Theimer, SW cor. NW SE, Section 1-11-3w, Oklahoma City Pool, has been completed for 32 bbls. in four hours, producing from sand 6,338-88 feet, total depth 6,392 feet. Capitol Producing & Refining Co.'s No. 1 Campbell, SW cor. NW SW NW, Section 2-11-3w, has been completed in Wilcox sand 6,280-6,490 feet for 11,805 bbls. in five hours. Plains Petroleum Co.'s No. 1 Saddler, NW cor. SW SW, Section 2-11-3w, had sand 6,335-6,540 feet and made 14,936 bbls. T. B. Slick estate and Atkinson's No. 2 Clegg, NE cor. NW SW, Section 2-11-3w, has been completed for 8,704 bbls. in 25½ hours, producing from sand 6,180-6,564 feet. Blackwell Oil & Gas Co. and Jones' No. 1 Community, SE cor. NW NE, Section 10-11-3w, topped Wilcox sand at 6,280 feet, drilled to 6,495 feet and made 7,975 bbls. in four hours. Indian Territory Illuminating Oil Co. and others' No. 2 L. Banta, NW cor. SW SE, Section 18-11-2w, has been abandoned at 4,440 feet. No. 1 L. Banta, SW cor. SE, Section 18-11-2w, made 199 bbls. from sand 6,620-22 feet. Long-Warr Oil Co.'s No. 1 Castle, SW cor. NW, Sectioon 20-11-3w, has been abandoned at 7,450 feet.

Okmulgee County

A. McInturff's No. 1 H. Hawkins, CEL SE NW, Section 20-12-14, has been abandoned at 2,286 feet. C. Ramstead's No. 1 Hoffman, NE cor., Section 29-12-14, made 500,000 feet of gas in sand 754-59 feet.

Osage County

E. O. Platter made location for No. 6, NE cor. NW SW NE, Section 30-22-9.

Pittsburg County

Choctaw Gas Co. moved a machine in for No. 1 Johnson, NE cor. NW NE, Section 16-7-18.

Pontotoc County

Brydia Oil Co. has a machine on the location for No. 1 Layne, SE cor. SW NW, Section 30-5-5, Bebee Pool. Clark & Cowden made location for No. 2 Brown, SE cor. NE, Section 12-4-7. Empire Oil & Refining Co. is erecting the rig for No. 1 Williamson, SW cor. NW, Section 7-4-8.

Pottawatomie County

Twin State Oil Co. has the cellar dug for No. 4 Archer, NE cor. NW SE, Section 22-6-3, West Asher Pool. Robinson & Hicks' No. 1 Crouch, NW cor. SW, Section 5-6-5, has been abandoned at 4,404 feet.

Seminole County

Magnolia Petroleum Co. moved the rig in for No. 1 Harjo Reed, SE cor. NW NW, Section 2-8-5, Carr City Pool. Tillman and others' No. 1 Mathis, NW cor. SE NW SE, Section 29-6-6, Konawa Pool, is a cellar. Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Co.'s No. 2 Davis, NE cor. SE NW, Section 30-8-8, Wewoka Townsite Pool, flowed 16,406 bbls. from Wilcox sand 3,970-82 feet. The Prairie Oil & Gas Co.'s No. 3 Hyde, SW cor. NW, Section 2-8-5, made 1,020 bbls. in Wilcox sand 4,145-61 feet.

Stephens County

Smythe and others' No. 2 House, NW cor., Section 29-2-8w, is rigging up rotary tools.

Tulsa County

Bert Swift and others' No. 1 Franklin, NW cor. SW SW, Section 9-19-10, is drilling at 850 feet.

Wagoner County

R. L. North's No. 2 Austin, SE cor. SW SE, Section 31-18-17, is drilling at 295 feet. No. 1 Roberts, NE cor. NW NE, Section 6-17-17, has been completed for 500,000 feet of gas in sand 980-85 feet.

CANADIAN FIELDS

(Continued from Page 56)

of wet gas with crude naphtha recovery in the Dalhousie sand, but this freak production failed to hold up.

A new "farthest south" test is being started south and west of Merland Oil Co.'s No. 1. Interests connected with the development are William Livingston of Calgary and F. R. McDonald of Vancouver, British Columbia, which Harold C. Ralph and associates, Mar-Jon Oils, Ltd., and D. A. Gillis of Vancouver are reported interested in the acreage. The syndicate's No. 1 test has been located in LSD 9, Section 28-18-2w5, and work is to start in February, 1931.

East Crest Oil Co.'s No. 3, LSD 4, Section 16-19-2w5, is drilling below 1,060 feet. Nos. 1 and 2 are delivering close to 500 bbls. a day.

In Section 4-19-2w5, Mercury Oils' No. 1, LSD 13, is making close to 700 bbls. a day, and No. 3, LSD 2, is making around 230 bbls. In Section 5-19-2w5, Miracle Oils' No. 2, LSD 16, is reported ready to spud in. Miracle's No. 1, LSD 11, Section 4-19-2w5, is making 292 bbls.

Look for Field to East

The large producers recently developed in the Mercury-East Crest area, south and east of the Home wells, has lent encouragement to the belief that the wet gas and crude naphtha of the Turner Valley are derived by lateral filtration from a large pool of heavier crude east of the field. While the drilling has indicated a southeasterly-northwesterly trend of the structure, with two parallel folds, a minority among operators strongly champions the idea that the new production in the southern end of the field is on a separate structure with a southwesterly-northeasterly trend. Merland Oil Co.'s No. 1 in the extreme south, with its freak show of wet gas and crude naphtha in the Dalhousie sand, is in line with this supposed structure. It represents, too, a condition different from any previously encountered in the main portion of the Turner Valley Field. According to this contention, the northeasterly end of the structure would lie to the east of Okotoks; and two great faults in this area about 2½ miles apart parallel one another for several miles. It is claimed these faults enclose the structure from whose oil bodies the crude naphtha of the Turner Valley is derived. Immediately east of the Central Turner Valley Field, the structure dips very sharply, as was indicated in British Dominion's No. 1 deep test, which drilled to 6,600 feet without reaching the lime. Still further east there is a fold supposed to be parallel. The theory of a southeast-northwest trend of structure has been generally accepted by geologists; but there has been insufficient drilling to determine what may lie some miles east of the proven field.

When high grade light crude, testing around 63° Be., was encountered in the upper horizons of the Turner Valley Field, the theory was quite general that this light crude had filtered upward from a large reservoir of heavier crude lying at greater depth. This theory was largely responsible for the general advocacy of deeper drilling, to tap the supposed reservoirs of heavy crude. When the Madison lime was penetrated, instead of a reservoir of heavy crude, the drill tapped immense deposits of a still lighter product, wet gas yielding a high grade crude naphtha. The theory of lateral filtration, previously advanced in some quarters to explain the light crude of the upper horizons, is now being used to explain the wet gas and crude naphtha of the Madison horizon.

While drilling has been done to the west of the field, on the Waite Valley and other structures, there has been practically no drilling to the east; though it is claimed that a source of the crude naphtha is likelier to be found east of the field, where the structures may be less sharply folded and faulted. It is possible that some favorable area to the east may be tested in the coming year to try out the various theories now being urged.

Other Operations

On the Pincher Creek structure, Weymarn Petroleum's No. 2, LSD 5, Section 7-6-1w5, is reported drilling in the Fernie shales at 2,475 feet with an oil show from the Dalhousie sands and sufficient gas to fire the boilers.

In the Lethbridge district, Texas-Imperial's No. 1, LSD 14, Section 22-8-22w4, is preparing to resume after cementing at 375 feet.

Shareholders of Lethbridge Leases, Ltd. held their annual meeting at Lethbridge recently when the following directors were elected: W. C. Wood, I. W. Deman, R. H. Uren, J. Deman and L. M. Jones. In addition to a royalty interest in the acreage of Lethbridge Petroleums, Ltd., and Texas Oil Co., the Lethbridge group still hold 3,100 acres in the field.

In the Spring Coulee district, Alberta Pacific Consolidated's No. 1, Section 15-4-23w4, is drilling in a hard stratum of the Colorado shale at close to 5,000 feet, and should be close to the horizon where production is anticipated.

George W. Scott, formerly field superintendent for Calmonts Oils, Ltd. has been appointed manager of Alberta Pacific Consolidated Oils, Ltd., succeeding Russell Forbes who resigned some months ago. Mr. Scott learned drilling in the Ontario fields and later had experience in Pennsylvania, coming to Alberta about two years ago. While with the Calmont company he brought No. 2 well into production, and put No. 1 in shape to deepen into the lime in spite of exceptional drilling difficulties. Mr. Scott's appointment is thought to foreshadow a considerable extension of the Alberta Pacific's drilling program in Alberta next spring.

In the Keho Lake district, Hudson's Bay Oil & Gas Co.'s No. 1 Keho, LSD 2, Section 17-11-22w4, has resumed drilling after recovering a string of tools and cementing back to 1,500 feet to overcome caving.

Red Coulee Field

On the Alberta end of the Red Coulee structure there is very little activity. Most of the operators are reported to have stacked their tools till spring. Scottish United Petroleums' No. 1, LSD 1, Section 3-1-16w4, offsetting Southern Alberta Exploration's No. 1 producer, is reported drilling 12½-inch hole below 50 feet. The outfit is running on gas from the field. The four producing wells on the Alberta side are reported holding up steadily. Celtic Oils' No. 1, LSD 4, Section 17-1-16w4, is shut down at around 2,560 feet. Dixie Oils' No. 1, LSD 15, Section 7-1-16w4, is shut down at 1,600 feet, and Devonshire Oils' No. 1, LSD 3-4, Section 10-1-16w4, is shut down at 2,000 feet. Capitol Oil & Gas Co. is reported planning additional drilling in the Red Coulee Field this spring. Dalco Oil & Gas Co.'s No. 2, LSD 7, Section 19-2-17w4, is standing at 2,200 feet. Vanalta Oils' No. 4, tentatively located some time ago close to the Vanalta discovery well, is not proceeding at present.

Test of Beaver Dome

After a prolonged shut down, Madison Oils' No. 2, LSD 10, Section 24-2-11w4, on the Beaver Dome, has resumed work and is reported drilling at 1,870 feet. The location is about 5 miles north of the Rogers-Imperial gasser. The Beaver Dome was first tested in 1915 by the old Beaver Oil & Gas Co. of Calgary. At 1,950 feet the Beaver well encountered a heavy gas flow, estimated at 20,000,000 feet. It is claimed this was a wet gas yielding 2 quarts of gasoline per 1,000 feet. In deepening for oil, the well was drowned out by water, and abandoned. Madison's No. 2 is close to the old Beaver well, and less than 100 feet off the gas horizon.

Montana Prospect

Canadian operators are interested in a test by International Royalty Co. on the Grandview structure in eastern Toole County, Montana. This test, in SW SW, Section 26-35-3e, is reported to have struck a flow of oil in the Ellis at 2,460 feet, but a water flow from above which was not shut off prevented making a test. The drillers are endeavoring to shut off water, and it is claimed the well looks like a 50-bbl. producer. On the Reserve structure in the Sweetgrass Hills, Western Natural Gas' No. 1 Mahoney, C SE NW, Section 23-37-4e, is reported to have been drilled through cement into the sand, encountering at 2,063 feet a gas flow estimated at 9,000,000 feet a day.

East Central Alberta

In the Ribstone Field, East Central Alberta, Algonquin Petroleums' No. 1, LSD 1, Section 20-45-1w4, is drilling below 200 feet. In the north end of the Ribstone Field, Rayco Oils' No. 1, LSD 3, Section 4-47-1w4, has derrick up and camp complete. This test is the center location on the south line of LSD 3. The test is regarded as a good gas prospect, being high on the structure, and it is expected gas production will be taken by the new Tri-Cities Utilities line serving the Saskatchewan cities from the Kinsella Field. The line is routed through Lloydminster and fairly close to the Rayco location. Rayco Oils, Ltd., holds 240 acres in the block on which No. 1 is located and 2,000 acres on the Ribstone structure, including a 40-acre tract within 250 feet of two of the Meridian producers. No. 1 is expected to spud in early in January.

Kinsella Gas Field

It is unofficially reported that some 50,000 acres have been leased east of the Viking gas field and south and southeast of Kinsella by various interests which are planning to develop natural gas production for the Saskatchewan cities. Considerable filing has been done in Townships 47 and 48 north of Kinsella and also south and east toward Fabyan. Interests connected with the proposed gas development are reported negotiating for C.P.R. acreage and also for acreage held by various British interests. Messaba Co., under arrangement with Tri-Cities Utilities, is reported planning a $500,000 development campaign if the Tri-Cities company secures the Saskatoon and Regina franchises. The Messaba company is planning to drill in the Rosetown district of Sasakatchewan, where the Rosetown Syndicate, headed by J. O. Williams, encountered good gas and oil showings a couple of years ago.

In the Castor district, Hudson's Bay Oil & Gas Co.'s No. 1 Paintearth, LSD 5, Section 27-39-15w4, has resumed drilling after cementing 11-inch casing around 3,069 feet.

Saskatchewan Test

In eastern Saskatchewan, Simpson Oil Co.'s No. 1, Section 9-29-25w2, has resumed drilling around 2,500 feet after retubing the boiler. At this depth the drill is working in a horizon identified with the Fernie shales, which in the Alberta fields is close to the Madison lime. Some traces of oil and gas have been met.

Manitoba Drilling

In southern Manitoba, Commonwealth Petroleums' No. 1, near Manitou, has finished a fishing job and is making new hole at 660 feet.

British Columbia Operations

In British Columbia, E. G. McKenzie Syndicate's No. 1, on Canyon Creek near Kelowna, is reported drilling below 700 feet, after encountering a thick oily substance, thought to be similar to the asphaltic sands of the Athabaska district.

On Lulu Island, International Pipe Line Co.'s No. 2 is drilling below 830 feet. International Pipe Line Co. has also completed arrangements for taking over acreage and wells of the Sumas Oil & Gas Co. in the Sumas district. The Sumas company got a show of gas in No. 1 well in Section 22-19-5e, which was abandoned below 700 feet, and carried No. 2 test, same section, to 925 feet, where it has been shut down for some months. International Pipe Line Co. will either deepen No. 2 or start a new test on the same acreage. West of the Sumas company's acreage, British Columbia-Alberta Oils' No. 1 is rigging up for a test in the SE, Section 20-16-4e, near Abbotsford.

In the Cariboo district, Frank Patrick Syndicate's No. 1, near Australian, is drilling below 600 feet and planning to continue work through the winter.

FUEL OIL RESEARCH BILL

Senator King of Utah has introduced Statute 5,466 (referred to Appropriations Committee) appropriating $10,000 for fuel research by the Bureau of Mines at its experiment station at Salt Lake City, Utah.

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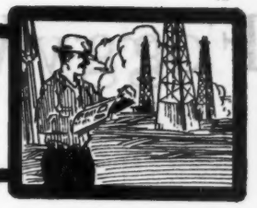

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Foggy Weather Retards Chicago Market

Talk of Advancing Refinery Prices Seems to Depend Upon Settled Crude Conditions. Gasoline Prices Unchanged

By J. B. Waldo

CHICAGO, Jan. 5.—The hope of a more active demand for the major products for the present week have been at least held back a little by the foggy rainy weather which has prevailed over so much of the territory and especially near the lakes. Consumption of gasoline has been decreased by these conditions and the demand for furnace oil has slackened with the consumer until many distributors have once more a number of unloaded cars on their sidings. The gasoline movement this morning was light, spot business being small and contract business rather less than was expected. Gasoline prices remain unchanged.

The move made by the Standard Oil Co. of Indiana to restore to normal practically all prices for both tank wagon and service stations is regarded as a real constructive step but apparently it has had no effect on the tank car market yet. It is understood that the next move contemplated is an advance of refinery prices. The trade here regard an advance in refinery prices to the jobbers as unlikely to be made until the surplus of the crude formerly taken by the Prairie company has been removed from the market. With settled crude conditions the gasoline situation is such that an advance might be made with prospects of its holding. The demand continues for the U. S. Motor and the antiknock gasoline, with little doing in the higher tests. Prices are named in the open spot market of from 4 to 4¼ cents with the price of the major refiners held at the nominal figure of 5 cents. Several of the jobbers report they have bought for their January requirements at 3⅜ to 3⅞ cents and will not be in the market again for some weeks the way their sales are going.

Kerosene continues to be neglected. There was quite a demand for furnace oil last week but the warmer weather has prevented the expected decrease in distributors' supplies and their orders are for small quantities but include a little of practically all grades. There has been no change in market conditions or prices for furnace oils. The industrial demand has been improved by the opening of many plants, some of which have needed fuel oil at once, while others will a little later. Colder weather would increase the orders of many of the industrial users of heavy fuel oils. The market for zero oils is very firmly held by refiners and variations in quoted prices to the consumer are usually due to some difference in the specifications.

The Chicago market showed a better tone last week, many of the sales agents in their various capacities striving for higher prices. In several known cases they succeeded in getting them. Several jobbers were in the market last week tendering orders for January ranging from 5 to 50 cars at their price of 3¾ cents, Group 3. In each case so far as known they did not succeed in buying at that price. The primary markets reported a better feeling, at least higher prices were asked by responsible refiners for first-class material. It is one of the most common occurrences to hear jobbers state that they hoped for higher prices. For one thing they believe that higher refinery costs will do away with much of the price cutting which has been going on over the territory. Other fair-minded jobbers, and there are many such, do not want the refiner to sell at less than cost or at so near to his costs that there is nothing left for the upkeep of the plant or for a legitimate profit. It really does seem that the price question is wholly in the hands of the refiners. There is one certain way to assure themselves of better prices and that is to run less gasoline; to run for a profit and not for quantity.

The competition between the various refining districts is certain to be active but it need not be suicidal and must not be, if the industry is to be successful.

The demand for gasoline was not active last week, yet as a whole, and considering the season of the year, the amount of business booked was fairly large. The spot demand varied a good deal both from day to day and between seller to seller, some having an excellent trade one day, while the good business fell to another the next. But quite a quantity of gasoline was moved in the spot market, most of it for January delivery. The contract ordering was fair and there was little complaint made by the larger refiners over their contract sales.

The industry is watching with great interest the sales to be made at the automobile show, first in New York and next in Chicago. The buying by the public and especially the orders by dealers who will show their faith in the purchasing power of their territory will tell the oil industry a good deal regarding the gallonage of the year 1931.

Prices Show Some Improvement

Prices as indicated showed a little strength. The market was pretty well established as above 4 cents, Group 3, for U. S. Motor gasoline. There were occasional sales made at slightly lower prices, but these were becoming less and less and the price by the end of last week was at least 4 cents and commonly 4⅛ cents. With refiners advancing their prices slowly and steadily as they will be able to do, if their runs do not show too rapid expansion, the market is bound sooner or later to take an upturn. Last year it was refining in excess of the quantity of gasoline that was moving to the consumer which broke down the market. The volume of crude brought to the surface will adjust itself in the long run to the needs of the refiner if the producer is not tempted by too high prices to continue to drill when the crude is not wanted. The gasoline price situation is still low on the higher tests and here again the low returns are due to too much gasoline of the not wanted kind. The present price of a good 60-62 400 gasoline is just about one-eighth of a cent above the price for U. S. Motor and not infrequently it is sold at the same price by refiners with more gasoline than they can sell readily. The 64-66 375 is being offered at 4½ cents for resale and the 68-70 360 at 5 cents, all these prices indicating the lack of real demand. Natural gasoline has shown a decided weakness and good BB grade was bought in this city by one rather large user at 2¾ cents, which price is below the quoted market, but shows the lack of demand. The blending naphthas also showed a lower trend.

Kerosene Inactive

The movement of kerosene is exceptionally light. There are various reasons advanced for this falling-off in the kerosene business, but none of them is fully adequate. The expansion of electric lighting plants has reduced the use of kerosene for lighting to small amounts in the country districts. Some of the offices of the larger refiners report that their sales of kerosene will not average a car a day. Distillates are being used as the means of working off the kerosene stocks and possibly as a result distillates are easy in price and freely offered by refiners. The demand for distillates is only fair as the number of burners which are designed to run with distillate as fuel is gradually growing less in proportion to the total number of burners, if not actually less in number. The trade is being asked 3 to 3¼ cents for kerosene, when sold as kerosene.

Furnace Oil Demand Good

The furnace oil demand is good with local sales offices of refiners and with the tank car marketers. Instructions against contracts form the chief part of the business as the new orders are comparatively rare and for smaller quantities. The demand from distributors takes in the entire range of material from distillate down through gas oils to the lighter and even the heavy furnace oils as most distributors have a considerable business with the larger type of burners which use the 24-26 or the 18-22 gravities. There is no relaxation in the demands of distributors for good material; in fact, they seem to be more exacting than in previous seasons. The distillates are good, too good in some instances, but even in these there are occasional rejections, some of which seem to be wholly without cause, as the oil is of the best quality, while other claims made are well based on the oil supplied.

There is talk of a scarcity of some of the furnace oils, the grades mentioned being the zero gas oils and high gravity fuel oils, although there is some difficulty in securing a good 18-22 zero fuel oil. Refiners have so reduced their runs that there is not the usual quantity of these oils being run and the consequence is a possible future shortage. The Shell Petroleum Corp. of this city has contracts with many sellers of furnace oils and those who are known to have contracts are receiving a goodly number of orders from buyers for the 28-30 and the 32-36 zero oils.

Industrial Fuel Oils

The movement of industrial fuel oils has begun, although it is not general as yet. One of the larger steel companies is now taking in a considerable quantity of fuel oil at each of its two plants near this city. The fuel oil supplied is an 18-22 gravity with a zero cold test, three-fourths of 1 per cent sulphur and viscosity under 500. It is first-class material. The company has informed the oil salesmen with whom it commonly deals that the price paid was 55 cents, Group 3. This is a low price for such an oil today even in 500,000-gallon purchases. But this company is an exception among the industrial plants near this city. They are rather slow in starting although many report that they have business enough booked to justify them in beginning operations on a fairly large scale. One artificial ice machine company has started its plant on full time and has called all of its old hands back to work. Of course the larger the number of men employed the larger is the purchasing power of the consumers, so that it works both ways when a large company puts several thousand men at work. The steel companies as a rule are beginning the year with a fair amount of business and they hope that the orders will be increased. Fuel oil orders should show some gain from the steel concerns.

The light demand has not had any result as to the price of zero oils of good quality. These are firmly held at full prices. There are no offerings of quantities of these zero oils and they are in good shape as to stocks on hand so far as can be learned. There are some offerings of oils which usually have a high cold test or a high viscosity, commonly both, and these oils are not wanted at the present time, so that the price of these grades range from easy to weak for the present.

Prices have been named recently on 18-22 zero fuel oil of 52½ cents and 65 cents, the real difference being chiefly in the percentage of sulphur. For a good grade of 18-22 the prevailing market here is 57½ to 62½ cents, and on a 22-26 zero, the market range is 60 and 65 cents a barrel, Group 3. The year 1931 began quite favorably for the sellers of industrial fuel. Orders for the first few days were considerably ahead of last month.

Industrial Gas Oil

The demand for industrial gas oil is light, the takings of the gas companies of U.G.I. gas oil being disappointing. The gas companies are operating largely on coal gas and have not as yet been obliged by any increase in the demand to add to their supplies by running any quantity of water gas. Even such cold weather as we have been having has not added to their needs so far. There is a steady market, as the quantity of straightrun gas oil is small and prices are held at their former level.

Retail Situation Improves

There has been a decided improvement in the price situation at several points where the tank wagon scale had been badly cut. Some of these points which have been restored to normal have been cut so long that it seemed strange to have a normal price quoted. Among the points which have been cleared up are St. Louis and the immediately surrounding territory; Peoria, which was a chronic cut-price town; St. Joseph, Mo., and many smaller points. It is understood that Detroit is well under way to a restoration of normalcy in prices. This will prove to be a great thing for the industry as the months go on and it also makes the suggestion that the next change in tank wagon prices would be an advance not as unlikely as it seemed when the suggestion was first made. It is beginning to be openly talked in the local trade that the present scale will be held until some time in the early spring and that the next thing will be an advance as soon as the refinery price situation justifies such a movement. It was predicted by some of the trade that within 90 days the Group 3 price of U. S. Motor gasoline would be advanced to 6½ cents. The end of 90 days would bring the first of April when the buying for the season is supposedly well under way.

Situation in Chicago

The local situation shows no real change. Tank wagon prices have not been openly cut and do not have to be restored. But there is sufficient sub rosa cutting or evading of prices to fill volumes. Recently the proprietor of a garage admitted that in addition to the regular Q.D.A. of 5 cents a gallon, he was receiving a rental of $200 a month for the use of the roof to carry a large display sign of the gasoline and its refiner. There is nothing uncommon in this. Another plan is for the refiner to rent a tank with pump and sufficient floor space to permit of the operation of the pump. This is then his property and he fills it with gasoline which he hires the owner of the garage to sell for him at a stated sum, usually a wage, although sometimes a commission. In one case a refiner wished to sell Ethyl Gasoline through a certain station but could not as the station sold at cut prices. Nothing daunted, he bought a station pump and the necessary tankage and shipped the Ethyl Gasoline to himself at that station, selling it through his own pump and paying an attendant to do the actual selling of the Ethyl Gasoline. Thus this station was supplied with Ethyl Gasoline while continuing to sell at cut prices.

Better Feeling in the Eastern Market

Refiner Quotations Slightly Higher But Trade Continues to Suffer From Price Cutters in Retail Field. Exports Sluggish

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Jan. 5.—A better feeling has developed in the gasoline situation in East Coast markets with the turn of the year, and refinery quotations have been advanced one-half cent per gallon by a number of sellers. Distressed offerings of motor fuel in eastern territory appear well liquidated and there is a definitely better sentiment in the market in this area as 1931 gets under way. Conditions in the remainder of the market remain unaltered, from a price standpoint, and business continues of rather routine proportions.

Extreme sluggishness is reported in export circles and the only big inquiry of the week was lost to Gulf suppliers when Rumanian sellers undercut the market. The outlook in the Gulf export market remains uncertain and reports from Rumania indicating that producing and refining operations in that country will be further increased, following the recent break down in the rationalization program initiated by Standard of New Jersey and Shell subsidiaries operating in Rumania, are causing some uneasiness among export operators in the United States.

East Coast refiners enter the new year with their plants operating on a curtailed schedule, and from current reports, this policy will be maintained until further progress has been made in cutting down excess stocks of refined products held by the industry. As a result of current market conditions, refiners are centering operations in their most modern equipment, capable of producing refined products at minimum cost, and this is naturally forcing the entire industry to work on extremely close margins. Refiners whose plant equipment is not strictly up to date are placed at a disadvantage in a market such as the present, and it is believed that manufacturers in this position will take steps this year to thoroughly modernize their installations.

Refinery Gasoline

Tide Water has taken the lead in advancing the market for U. S. Motor gasoline, marking up its posted price one-half cent per gallon to 7 cents in tank car lots at refinery terminals. All other major companies later met this price.

The turn of the year witnessed a slight pick-up in demand, and jobbers who had permitted their storage stocks to run down to the vanishing point, for inventory purposes, have come back in the market for replacements in substantial volume. Weather conditions have been favorable in most sections of the East, and consumption has been rather well maintained.

The movement of California gasoline into East Coast markets has been rationalized during the past month or so, and the Pacific Coast motor fuel is coming along in quantities sufficient only for the established needs of the regular marketers of this gasoline. This, with a falling off in shipments of Gulf and South American gasolines into this territory, has helped the market to the slight recovery which has just been witnessed, and augurs well for the immediate outlook for price maintenance.

Refiners, it is believed, are determined to thoroughly stabilize their wholesale markets in this territory preparatory to a general effort to restore some semblance of stability to retail markets, which are badly demoralized in many sections of the East, where price cutting has become a general thing. This program, it is believed, will require most of the first quarter of the year for fulfillment, and it is expected that the industry will go into the seconl quarter, which marks the beginning of the season of heaviest consumption, in improved statistical position.

Tank Wagon Gasoline

Pricewise, there were no developments of general interest during the week, although consumption has been well maintained, and marketers are encouraged over the outlook for business during the first quarter of the new year.

Retail markets in many of the largest consuming centers in eastern territory are still in very unfavorable position, due to widespread price cutting, and it is not believed that the market will work out of this condition until the refinery market shows a further recovery.

There is an admitted uneconomic multiplicity of filling station facilities in this area, and large integrated companies are closely studying this situation with a view to further broadening of their own service station chains. While retail marketing facilities are excessive in virtually all parts of the country, it is believed that this condition is particularly bad in the East, and large marketers realize that their difficulties in maintaining retail markets will not be lessened until a greater part of their distribution is consolidated in owned or controlled stations.

Premium motor fuels have enjoyed a brisker demand during the past week, due to the colder weather experienced throughout the East, and refiners are more optimistic regarding the outlook for the top grades of gasoline during the remainder of the winter season.

Kerosene

Consumption has been well maintained, but with refiners carrying ample stocks there is still considerable selling pressure to be noted in some divisions of the market. The posted price for 41-43 water white still holds at 6½ cents per gallon in tank car lots at the refinery, but this figure is being freely shaded and the general market range is from 6 to 6¼ cents per gallon on spot sales.

No changes in tank wagon kerosene prices have been made. Marketers report a continued active demand for kerosene, and tank wagon deliveries are being well maintained. Unemployment and unsettled economic conditions in many sections of the territory have been responsible for a substantial increase in the use of kerosene heaters this winter, and this is being reflected in heavier tank wagon sales.

Lubs

Refiners have carried over their quotations on red and pale oils into 1931 and the start of the new year has witnessed a slight recovery in demand, particularly in textile oils. Sellers are looking for a material widening in demand around the middle of the month, at which time consuming manufacturers will have completed their inventories and re-entered the market for replacement stocks.

It is still a buyers' market in the cylinder oil division, and business is along conservative lines. No price changes have developed on any of the quoted grades during the week. The undertone appears to have improved slightly with the turn of the year, however, and while refiners are still willing to grant slight price concessions on most grades, the tendency to hold for posted prices appears to be spreading somewhat.

Wax

Inquiry has picked up this week, a number of domestic consumers coming into the market for supplies for their requirements during the first three months of 1931. Buyers are rather definite in their price views, however, and are demanding price concessions when placing contracts.

Sellers have not altered their price views during the week, but there is a noticeable disinclination on the part of most refiners to grant any price concessions on paraffin wax for later delivery, and operators here are looking for a slight recovery in the price basis during the current quarter. Refiners have reduced their output, and are making every effort to cut down surplus stocks, it is pointed out, while consumers have permitted their reserve inventories to dwindle almost to the vanishing point.

Diesel Oil

As a result of the recent reductions in Diesel oil prices at East Coast ports, leading companies marketing that oil have revised their contracts for 1931 to provide a maximum quotation of $1.95 for the new year, as compared with the former specified maximum of $2.10. Under the terms of these contracts, buyers are guaranteed delivery of Diesel oil at a price not to exceed $1.95 per barrel during 1931, and are given delivered at a price based on the spot quotation on date of delivery.

There has been a continued good movement of Diesel oil into bunkers this week, both at Atlantic Coast ports and at terminals in the West Indies and the Panama Canal, the large number of transatlantic vessels which have been diverted to the West Indies cruise business for the winter season being responsible for this increased gallonage.

The outlook for heavier consumption of Diesel oil in shipping operations during 1931 has been enhanced by reports in shipping circles indicating that a fair amount of tonnage which has been laid up for the past several months will be put back into service during the first half of the new year.

Industrial demand for Diesel oil has been fairly well maintained this week, and the market remains steady and quotably unchanged at $1.85 per barrel, in bulk, f.o.b. refinery terminals.

Furnace Oil

Spot demand for furnace oil has been well maintained during the past week, and posted quotations remain unchanged on all grades. Contract withdrawals are holding up well, and spot sales are reported running ahead of those for the comparable period last year.

Refiners and marketers have a substantial volume of contract business on their books for the first quarter of 1931 and a fairly active market is looked for during that period.

Fuel Oil

Movement of bunker "C" oil into consuming channels has been steady during the week, and the market locally is well established at $1.05 per barrel, in bulk, at marine terminals. Contracts for 1931 have been written at a maximum of $1.35 per barrel for the year, with deliveries to be made at prevailing prices.

While considerable oil-burning tonnage has been withdrawn from active service during the past six months, including a large number of oil tankers, it is reported in shipping circles here that a number of these vessels will be placed back in commission in the near future, indicating a further widening in fuel oil consumption by the marine trade.

Industrial sales of fuel oil have been well maintained, in so far as gallonage is concerned, but this division of the market is still feeling the effects of price cutting competition, and the market is by no means steady from the price standpoint. The extremely low prices at which fuel oil has been recently sold at some points on the Atlantic Seaboard put this oil in a class by itself as a fuel, and discourages even the competition of low grade coals.

Gas Oil

A moderate movement of gas oil on standing contracts was noted during the past week. While 28 plus recycled oil is still nominally posted at 5¼ cents per gallon, sellers are freely shading this figure on spot sales, and the actual market is closer to 4¼ cents in tank car lots at refineries than the posted figure.

Gas manufacturing companies and other large gas oil consumers have placed contracts for their 1931 requirements in most instances on sliding scale contracts, which give them the advantage of a guaranteed maximum for the year and the benefit of the spot price prevailing on date of delivery.

Export Markets

An inquiry for 7,000 tons of 64-66 gasoline was reported in the Gulf market during the week, the oil being wanted for January shipment to Europe. Although domestic sellers quoted down to 5.90 cents per gallon for this business (10 points under the posted price) the order was not placed in this country, but was taken by Rumania.

The only other activity reported at the Gulf on gasoline this week was an inquiry for 2,000 tons of 64-66 naphtha for January shipment to France. Up to the time of writing, this business had not been booked.

Fuel oil improved somewhat at the Gulf, and the market appeared definitely settled at 65 to 67 cents per barrel in cargo lots, an advance of 2 cents per barrel over previous quotations.

Some European interest has been shown in Mexican heavy crude oil for delivery over 1931 and it is expected that some business will be booked in this branch of the market during the next several weeks.

Kerosene has been rather sluggish at the Gulf during recent weeks, no cargo fixtures being reported. East Coast refiners, however, have had a fair call for the cased product. Russia and Rumania, principally the former, have cut substantially into foreign markets for kerosene. An item of interest to domestic refiners this week was the announcement of the new Chinese protective tariff. The new tariff schedule imposes sharply higher duties on a number of commodities, but lowers the import tax on kerosene and gasoline.

Petroleum Exports

Christmas week was reflected by a sharp falling-off in export movement of refined petroleum products throughout the local port, and the volume of new business was likewise of rather small proportions.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Dec. 27	Dec. 20	Dec. 13
Gasoline	110,000	300,000	325,000
Naphtha	100,000	875,000	2,745,000
Kerosene	50,000	815,000	725,000
Fuel oil	45,000	160,000	120,000
Lubricating oil	675,000	960,000	1,365,000
Petroleum, refined	650,000	1,110,000	790,000
	Pounds		
Petrolatum	30,000	.....	.....
Paraffin wax	745,000	1,290,000	1,695,000
Refined	450,000	345,000	.....
Scale	210,000	790,000	1,205,000
Lubricating grease	250,000	970,000	1,115,000

It is reported that a fair volume of business on the minor products has been booked for first-half-January shipment, and it is expected that considerable products will move into foreign channels via the local port during the present month. Unsettled prices are still tending to exert an unfavorable influence upon export demand, however.

Imports

Imports of crude and refined petroleum

(Continued on Page 114)

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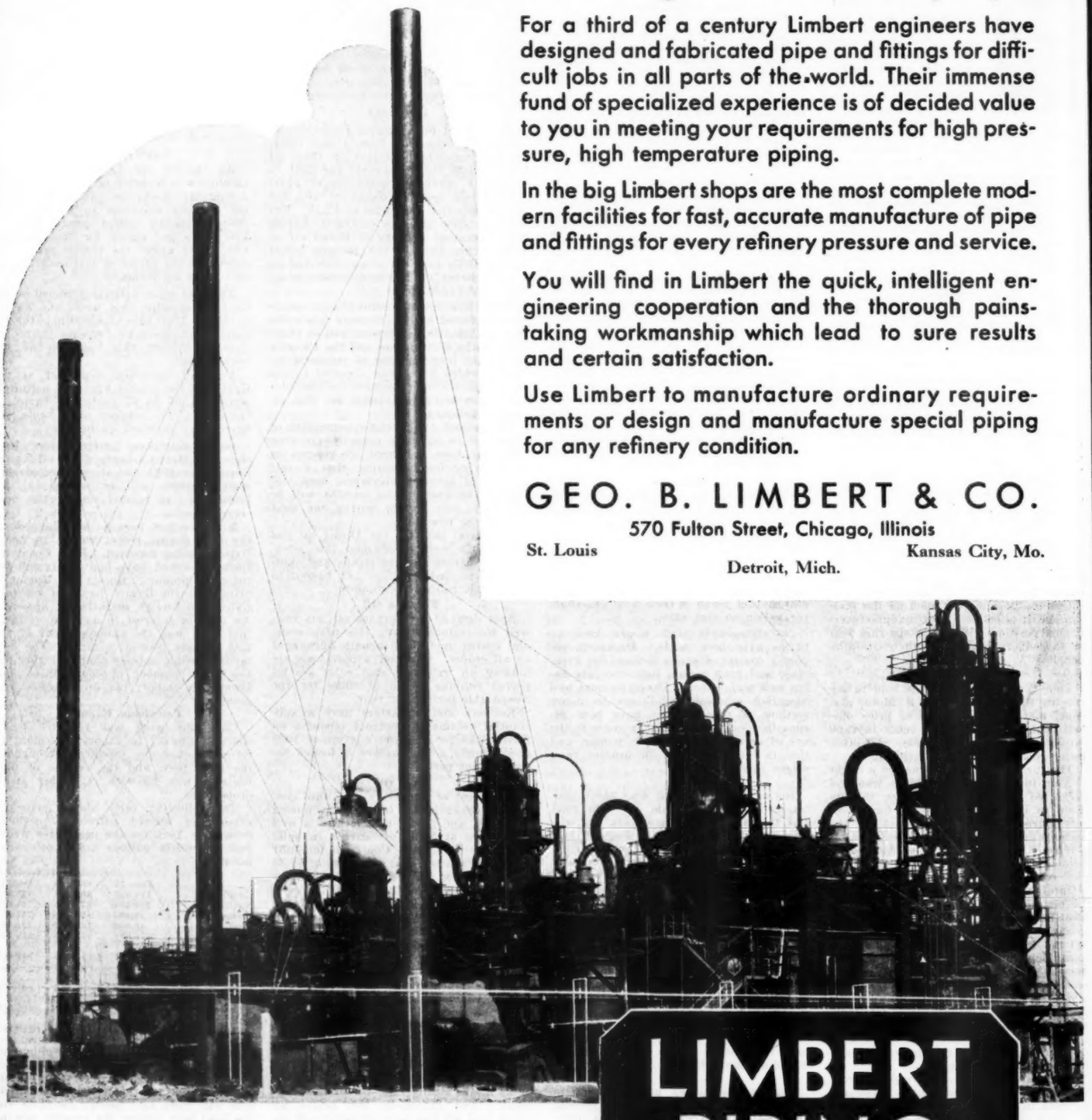

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Interprets Rules On Use of Screwed Type Dome Covers

Col. B. W. Dunn, chief inspector for the Bureau of Explosives, has submitted the legal interpretation of the Interstate Commerce Commission and his own views regarding new transportation regulations effective January 1, 1931, regarding which there is a question whether cars equipped with the screw type dome cover may be used to transport natural gasoline. Colonel Dunn points out that the order, as it is written, is not specific enough to be interpreted as meaning that screwed type dome covers may not be used after January 1, but cautions the industry that revisions are likely to be made in the future which will call for the use of dome covers of more modern design.

The part of the new regulations in question provides "After January 1, 1931, all tank cars used for this purpose (materials of specified vapor pressures) must be equipped with manhole covers of approved type, designed to make it practically impossible to remove the cover while the interior of the tank is subjected to pressure."

In a letter written by the legal department of the commission on the above question its views was stated as follows:

The quoted provision contains no information as to what a manhole cover of an "approved type" would be, or as to whether the screw type cover is one which would not make it "practically impossible to remove the cover while the interior of the tank is subjected to pressure."

Colonel Dunn amplified the interpretation of the legal department by adding:

"It has long been known that the screw manhole closure can be removed from a tank car which is under internal pressure, and as a result of this knowledge the A.R.A. specifications effective July 1, 1922, required that all Class 4 tank cars built after that date be equipped with bolted manhole covers if of external type and with yoke and screw covers if of internal type. Since that date, there has been a continued effort to improve the design of bolted covers, and practically all the tank car builders for the past three or four years have been equipping new cars with bolted manhole covers equipped with some safety locking device.

"Therefore, it is my personal recommendation to you that in anticipation of the possibility that at some future date the regulations will place more definitely prescribed restrictions on the type of manhole closure to be used on cars used for the transportation of inflammable liquids having minimum pressures in excess of those mentioned above, you should take advantage of the delay incident to the opinion expressed by the commission in regard to the present requirements to bring the cars in question into line with the modern designs of manhole closures now being used on new construction for the service referred to."

MARK V. ENRIGHT DEAD

WICHITA FALLS, Tex., Jan. 2.—Mark V. Enright, general superintendent of the gasoline department of the Skelly Oil Co. of Wichita Falls, Tex., died in the St. Joseph Hospital, Houston, Tex., of pneumonia.

Deceased was born in Bradford, Pa. He was employed as a construction engineer on the Panama Canal and returned to Bradford after its completion to superintend the Pennsylvania Gasoline Co. for eight years, before coming to Texas.

SLIGHT INCREASE IN PRODUCTION AND INVENTORY DURING NOVEMBER

Daily natural gasoline production in November, 1930, was slightly greater than in October but less than in November, 1929, according to the latest report of the Bureau of Mines. The daily average in November was 5,930,000 gallons which was 70,000 gallons more than in October and 80,000 gallons less than in November, 1930.

The increase in November, 1930, was due to the gain in California where the Kettleman Hills area is constantly adding to the output. The production of the West Coast State in November, 1930, was 68,400,000 gallons which was 1,300,000 gallons greater than the total production of 67,100,000 gallons in October. The production in November, 1929, was 66,200,000 gallons.

California continues to maintain a large lead over other states in natural gasoline production. The total production for the first 11 months of 1930 was 747,000,000 gallons which compares with 537,200,000 gallons for Oklahoma and 446,800,000 gallons for Texas. Most of the older fields in California have maintained a uniform production throughout the past year and the declines have been more than offset by the increases in Kettleman Hills and Playa Del Rey Fields.

The Rocky Mountain area continues to show a gain in natural gasoline production. The production totaled 5,600,000 gallons in November, 1930. This compares with a total of 5,100,000 gallons for the 31-day month of October and 3,900,000 gallons in November, 1929. In contrast, the production in the Appalachian area was 7,500,000 gallons in November, 1930, and 9,400,000 gallons in November, 1929.

Oklahoma has experienced the greatest decline in output. The November, 1930, production was 41,500,000 gallons, a sharp decline from the 46,600,000 gallons in October and the 55,600,000-gallon total for November, 1929. A large part of this decline is accounted for by the decrease in the Greater Seminole area of Oklahoma. In November, 1929, that area had a production of 27,400,000 gallons. There has been a consistent decline since that time and in November, 1930, the production totaled 16,600,000 gallons. The old plants in the Osage area have also decreased in production. These plants which at one time furnished the bulk of the output in Oklahoma produced 6,000,000 gallons in November, 1930, which was 30 per cent less than the 7,800,000-gallon total in November, 1929.

The production in the North Louisiana area is also on the decline. The output in November, 1930, was 4,700,000 gallons, a decrease of 1,100,000 gallons when compared with October. In November, 1929, the production totaled 6,100,000 gallons.

Production has been fairly steady in Texas throughout the entire year. The output of plants was slightly greater in November, 1930, than in October. The November, 1930, output of 43,900,000 gallons was 3,000,000 gallons greater than the output in November of last year.

The increase in Texas over a year ago comes from the Panhandle and scattered fields in other parts of the State. Despite the curtailment programs which were made effective in the Panhandle during the past year, the natural gasoline production is greater. The Gray County development is the largest source of supply. The new wells in most cases have shown a large production of casinghead gas. The gasoline content of the older wells has shown a steady increase. The production of 22,000,000 gallons during November was more than half of the total output of the State.

In the East Central Texas area, the Van Pool has brought an important contribution to natural gasoline production in the new plant of the Pure Oil Co. The output of this plant accounts for the increased production in that area during November.

The west central production has shown little change over the past year. There has been some increase in the production of the Big Lake area which has offset decreases in the older pools.

The production in North Texas areas is on the decline. This is partially due to proration programs which have curtailed the amount of gas available from a large number of wells. This includes many wells which have been producing a few thousand feet of casinghead gas daily for several years.

Although there have been several new pools opened up in Kansas during the past year, there has been little change in natural gasoline production of the State. In fact, the production of 2,800,000 gallons in November, 1930, was 300,000 gallons less than in November, 1929. Proration also accounts for the situation in Kansas. There are at least two new plants to be built in the State when conditions are normal and drilling operations are expanded so that an adequate supply of gas will be available. One plant is to be built in an area where a large quantity of natural gas having a small gasoline content is available.

Natural gasoline plant operations in Arkansas are on a settled basis. Few new wells are being completed in the light gravity fields, but the older wells are showing little decrease so far as casinghead gas is concerned. The gas is increasing in gasoline content.

Stocks of natural gasoline held by plant operators on November 30, 1930, amounted to 25,036,000 gallons which compares wth 23,481,000 gallons on hand a month previous and 21,583,000 gallons on hand a year previous. Blending of natural gasoline at the plants showed a decline from October. The accompanying table summarizes the November, 1930, report.

(In thousands of barrels)

	Natural gasoline						Blended motor fuel Nov., 1930		
	Production				Stocks end of month				
	Nov., 1930	Oct., 1930	Nov., 1929	Jan.-Nov., 1930	Nov., 1930	Oct., 1930	Natural gasoline used	Naphtha or other oils used	Stocks end of month
Appalachian	7,500	6,900	9,400	79,700	2,882	2,597	72	88	213
Ill., Ky., etc.	1,000	1,000	1,300	11,200	257	207	....	....	....
Oklahoma	41,500	46,600	55,600	537,200	8,198	9,258	149	149	145
Oklahoma City	3,400	4,200	(*)	32,500	862	924	23	....	8
Osage County	6,000	6,300	7,800	69,200	1,680	2,474	10	3	4
Seminole, etc.	16,600	18,300	27,400	237,800	2,202	2,290	30	33	40
Rest of State	15,500	17,800	20,400	197,700	3,454	3,570	86	113	93
Kansas	2,800	2,900	3,100	29,600	809	709	5	1	4
Texas	43,900	43,600	40,900	446,800	8,889	7,390	220	363	153
Panhandle	22,000	21,700	20,800	227,000	4,586	3,720	53	68	41
North Texas	3,700	3,600	4,200	39,800	867	712	51	50	40
West Central	12,300	12,800	12,500	125,500	2,238	2,192	86	232	44
Rest of State	5,900	5,500	3,300	44,500	1,198	766	30	13	28
Louisiana	4,700	5,800	6,100	65,500	802	808	8	5	7
Arkansas	2,600	2,700	2,700	29,200	301	329	208	203	37
Rocky Mountain	5,600	5,100	3,900	49,900	935	732	....	....	....
California	68,400	67,100	66,200	747,500	1,962	1,450	....	....	....
Long Beach	14,100	14,800	15,800	158,700	....	....	....	....	....
Ventura Avenue	5,000	5,000	6,300	55,000	....	....	....	....	....
Seal Beach	1,600	1,800	3,300	24,900	....	....	....	....	....
Huntington Beach	2,400	2,500	3,600	30,300	....	....	....	....	....
Santa Fe Springs	14,900	15,800	18,300	191,200	....	....	....	....	....
Rest of State	30,400	27,200	18,900	287,400	....	....	....	....	....
Total	178,000	181,700	189,200	1,996,600	25,036	23,481	662	809	559
Daily average	5,930	5,860	6,310	5,980	....	....	22	27	....
Total (thousands of bbls.)	4,238	4,376	4,505	47,533	596	559	16	19	13
Daily average	141	140	150	142	....	....	....	....	....

*Included under "Rest of State."

SEVERAL CONTRACTS NOT RENEWED IN CALIFORNIA

LOS ANGELES, Calif., Jan. 5.—Natural gasoline prices in California were substantially lower this week and a further softening is anticipated. Commitments for the month of January were made by several buyers on the basis of 5 cents per gallon and additional contracts were made for the same period on the basis of 4¾ cents. The reduction in prices of natural gasoline since the first of 1931 is attributed to the failure of buyers to renew purchase contracts which expired at the close of 1930.

Most of the larger companies are carrying excessive stocks of casinghead and are reluctant to make any additional commitments even at favorable prices until they have liquidated at least a substantial portion of the amount already in storage. The present depressed market for natural gasoline is due in a large extent to the overproduction of natural gasoline resulting from development work at Kettleman Hills and the probability that marketers will be obliged to absorb an additional substantial quantity due to drilling operations in the Lost Hills-Belridge Fields of Kern County where deep Temblor production has already been found quite prolific. It will be interesting to watch the effect which distress casinghead will exert on retail gasoline prices during the course of the next 30 or 60 days. One large producer of natural gasoline has tentatively been offered 4 cents per gallon for its entire production during 1931 but no definite decision has been reached up to the present time.

OIL INDUSTRIES SERIES

The 12 booklets published by the American Petroleum Institute during the past year as the "Oil Industry Series," a complete and nontechnical story of petroleum and the petroleum industry, will be published during 1931 in the form of a book entitled "Oil." It is expected the volume will be ready for distribution about February 15.

The book will contain 12 chapters, covering these subjects: (1) What is Petroleum; (2) Petroleum in Legend, in History, and Today; (3) Petroleum, a World Industry; (4) The Oil Industry in the United States; (5) Conservation of Petroleum; (6) How Oil Is Found and Produced; (7) How Crude Oil Is Transported and Stored; (8) How Petroleum Is Refined; (9) Gasoline, 30 Questions Answered; (10) Petroleum From Well to Market; (11) Petroleum for Lubrication; (12) Uses of Petroleum Products.

Brief Items for Petroleum Refiners

NEW JERSEY STANDARD MERGES TANKER FLEETS

NEW YORK, Jan. 5.—The European consortium formed as of January 1 through consolidation of the tanker fleets of European subsidiaries of Standard Oil Co. (New Jersey) has been designated as International Co., Ltd., it is learned here. The European tanker group, which concentrates under one head the operations of foreign tanker fleets along lines similar to the operation of the Jersey company's American tonnage by Standard Shipping Co., will be under the direction of Robert L. Hague, vice president and general manager of the Standard Shipping Co. Mr. Hague will continue in his present post with the American shipping subsidiary of the New Jersey company and will make periodic visits abroad to supervise the operations of International Co., Ltd.

International Co., Ltd., will maintain its headquarters in Lichtenstein, which is the smallest principality in Europe. The new company will have complete control of the operations of the tanker fleets of European subsidiaries of the New Jersey company but it is understood that ownership of the tankers will remain vested with the various subsidiary companies and any additions to the fleet will be financed by the individual companies rather than by International Co., Ltd. The new company will operate and route tankers and other floating equipment of the various companies involved in a manner to obtain maximum efficiency from the equipment available and eliminate conditions which have prevailed in previous instances whereby one company would find itself with idle tanker tonnage on hand while another Jersey European subsidiary would be chartering tonnage in the open market to care for a sudden rush of business. Several of Jersey's European subsidiaries have recently added large new modern tankers to their fleets and a number of additional vessels for these companies are now building in European yards.

M. W. RICHARDSON OPENS OIL BROKERAGE OFFICE

M. W. Richardson, well known in Mid-Continent refining and marketing circles, has resigned as manager of the Tulsa office of the Spencer Petroleum Co. to engage in brokerage business. He has opened offices in the Hunt Building, Tulsa.

Mr. Richardson has been engaged in the marketing for the Spencer company and other concerns for a period of 12 years. Previously he was connected with the traffic and sales departments of the Sapulpa Refining Co. He has been in charge of the Tulsa office of the Spencer company for the past five years. He has made arrangements to carry on a general brokerage business in all refinery products.

FRED C. EATON RETIRES

Fred C. Eaton, for several years superintendent of the Warren, Pa., refinery of the Valvoline Oil Co., has retired and will devote his time to private interests. Mr. Eaton has been engaged in the refining business for the past 33 years and is well known in Pennsylvania refinery circles.

Employes of the Valvoline company gave a banquet in Mr. Eaton's honor on the occasion of his retirement. He was presented with a chair by his associates.

GLOBE IN NEW QUARTERS

CHICAGO, Jan. 3.—The Globe Oil & Refining Co. of Illinois is now settled in its new quarters in the Buckingham Building on East Van Buren Street, between Michigan and Wabash Avenues.

ATKINS AND KAYE HEAD SKELLY SALES AND REFINING DIVISIONS

Important changes in the sales and manufacturing departments of the Skelly Oil Co. were announced the past week by W. G. Skelly, president.

Coincident with the announcement that the general sales offices of the company would be located at Kansas City, Mo., W. T. Atkins was appointed general sales manager. Mr. Atkins has been connected with the sales organization of the Skelly company for the past 10 years. He joined the Skelly organization when it acquired the Community Service Co. of Davenport, Iowa, of which he was vice president and general manager. For the past seven years he has been manager of bulk and retail station sales.

W. T. Atkins

In his new position Mr. Atkins will also have charge of tank car sales. G. A. R. Slocum, who has had charge of the latter sales for several years with headquarters at Eldorado, Kans., has moved to Kansas City where he will be assistant to Mr. Atkins. Mr. Slocum joined the Skelly company 12 years ago when the company acquired the Midland Refining Co. with a refinery at Eldorado. He was in charge of tank car sales for a period of several years.

G. A. R. Slocum

The Skelgas division of the Skelly company has been incorporated as the Skelgas Co. and will have its headquarters in the Skelly Building built last year at Kansas City. Mr. Atkins has been appointed vice president and general manager, and Mr. Slocum, his assistant. This company has charge of sales of liquefied gases for which the company has developed a large outlet as domestic fuel and other uses in the Middle West.

Emby Kaye, for several years general superintendent of the natural gasoline department of the Skelly company, has been appointed manager of the newly created manufacturing division. The new division includes the refinery and compounding operations of the company as well as natural gasoline manufacture. The natural gasoline department which was formerly operated as a part of the production division now becomes a part of the new division.

Emby Kaye

Mr. Kaye is well known in natural gasoline circles of the Mid-Continent. He joined the Skelly organization following the World War and as superintendent developed the natural gasoline operations of the company until it is now one of the major manufacturers. Mr. Kaye will continue to have his headquarters at the Tulsa general offices of the company. The company's refinery and compounding plant are located at Eldorado.

John R. Bailer of the Kansas City office will be manager of stations. J. D. Powell, assistant treasurer in charge of credits, and Chester MacCracken, advertising manager, formerly of Eldorado, are now connected with the Kansas City office. Ford Bacon, who has been in direct charge of Skelgas operations, is now located at Kansas City.

TAYLOR CAPACITY 7,600 BBLS.

The Taylor Refining Co., Taylor, Tex., is now operating its skimming plant with a daily capacity of 7,600 bbls., taking the crude oil from the nearby field. G. L. Rowsey is president and general manager of the company.

ATT'Y GENERAL MAKES GASOLINE PRICE INQUIRY

The office of the attorney general in Oklahoma is interested in learning why the public continues to pay for gasoline at prices which it is claimed take no account of the sharp decline in crude oil markets. In an open letter which he says must not be given official status, Attorney General J. Berry King calls upon producers, refiners and marketers in the State to advise him as to what may be necessary to afford "some measure of relief and result in a drop in gasoline prices to correspond to lower crude oil costs."

"Many of us," the attorney general says, "during the last several months have given our time and effort trying to uphold the laws and agencies of state government to the end that the great oil industry might be stabilized and preserved in its entirety.

"Many of the best minds in Oklahoma today are in disagreement with regard to the efficacy of the present plan of proration existing in this State, but there is one fact that stands out so prominently that no one can fail to see—that is the fact that with the continued decline in the price of crude oil, there has been no corresponding decline in the price of gasoline, oil and refined petroleum products which the public is compelled to purchase so extensively.

"Over and over again the question has come to our office and frankly, I am unable to find the answer.

"May I not, therefore, inquire of those who know or might be presumed to know, if there is any suggestion or advice by which our department of the state government could be instrumental in assisting or providing for the public to secure a corresponding benefit from the present low price of crude oil?

"While not within the scope of my duties, it might be interesting to the approaching legislature also to be advised if that branch of the state government likewise could bring some relief along this line."

NEW S. O. INDIANA CONTRACT

CHICAGO, Jan. 6.—The Standard Oil Co. of Indiana has begun making a simple form of agents' contract which it calls its resellers authorized agents' agreement. The contract provides that the seller is to handle the gasoline of the company exclusively for one year and is to receive a discount of 3 cents a gallon from the normal service station price at the place of the agent's business.

The contract is a simple agreement between the parties and contains no lien of any kind on the property, such as a lease. This arrangement is intended for general use over the territory.

ARRO MAKING INSTALLATIONS

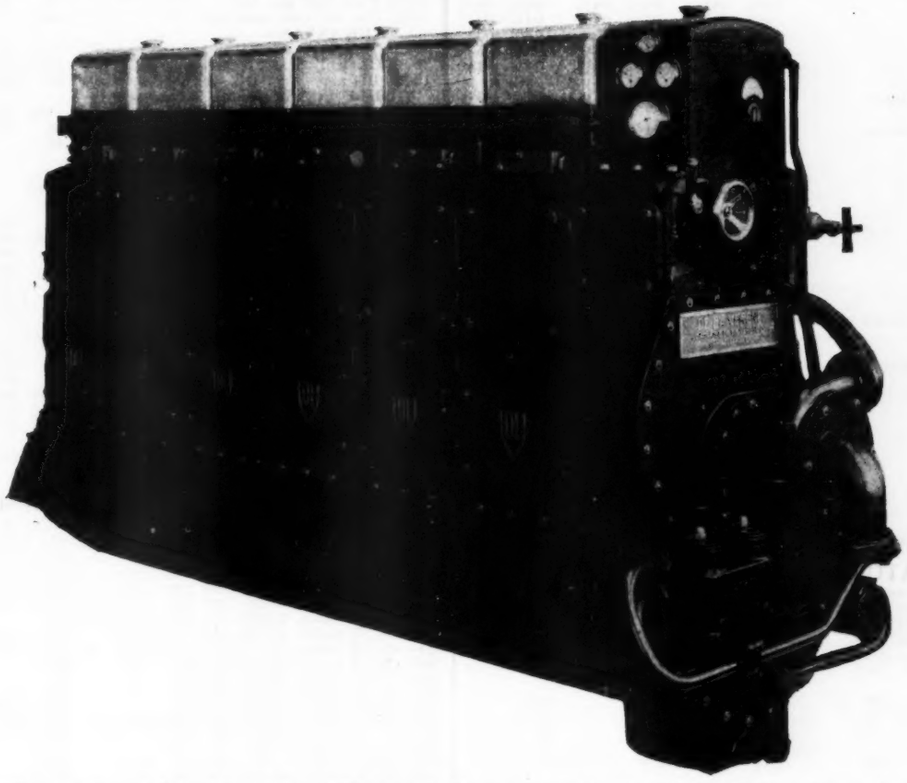
New installations at the West Lewistown, Mont., skimming and cracking refinery of the Arro Oil & Refining Co., will be completed April 1. The company, which operates a 500-bbl. capacity Dubbs cracking plant, is replacing a 10x30 reaction chamber with a 10x40 unit, and is installing a new dephlegmator.

The refining plant, which has a total crude capacity of 1,500 bbls. daily, is shut down at present in accordance with its policy of running nine months and suspending operations three months in the year.

PHILLIPS IN CHARGE OF SALES

The sales department of the Pure Penn Refining Co., formerly known as the Levi Smith Refining Co., at Clarendon, Pa., is headed by J. R. Phillips. This company's plant was recently increased from a capacity of 200 bbls. a day to 500 bbls.

THE NEW DE LA VERGNE HIGH SPEED DIESEL



The engine is designed for 750 revolutions per minute with all the characteristics necessary to make such high speed conservative and reliable.

It can be adapted to any kind of service. Bedplates, power-takeoffs, reverse gears, flywheels, clutches, radiator cooling can be provided as required.

The engine can be run at any speed from 300 R.P.M. up to the rated speed of 750 R.P.M.

Every successful advance in high speed engine construction is incorporated.

The engine is built in three to eight cylinder units.

I. P. Morris & De La Vergne, Inc.

RICHMOND & NORRIS STS. -:- PHILADELPHIA, PA.

Branch Offices:

33 Rector St., New York, N. Y.
615 Mills Bldg., El Paso, Texas
608 Land Bank Bldg., Kansas City, Mo.
1016 Second National Bank Bldg., Houston
1302 Lynch Bldg., Jacksonville, Fla.
176 Federal St., Boston, Mass.

De La Vergne has been building 4 Cycle Solid Injection Engines since 1893.

Member Diesel Engine Manufacturer's Association

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	Jan. 6		Dec. 30		Dec. 23	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.04	.04¼	.04¼		.04¼	
56-58 450 endpoint	.04	.04¼	.04	.04¼	.04	.04¼
58-60 437 endpoint (U. S. Motor)	.04½	.05	.04	.05	.04½	
60-62 437 endpoint	.04⅝	.05	.04⅞	.05	.04¾	.04½
60-62 400 endpoint	.04¼	.05	.04¼	.05¼	.04¼	.04½
64-66 375 endpoint	.04½	.05½	.04⅝	.05½	.04¾	.05¼
68-70 360 endpoint	.05	.05¼	.05	.05¼	.05¼	.05⅜
64-66 437 endpoint (blend)	.04	.04½	.04¼	.04½	.04¼	.04¾
NORTH TEXAS—						
50-52 450 endpoint	.04		.04		.04	
58-60 450 endpoint	.03¾	.04	.03⅞	.04	.04	
58-60 437 endpoint (U. S. Motor)	.04	.04½	.04	.04½	.04	.04½
60-62 400 endpoint	.04¼	.04½	.04¼	.04½	.04¼	.04½
64-66 390 endpoint	.04½	.04¾	.04½	.04¾	.04½	.04⅞
64-66 375 endpoint	.04¾	.05	.04⅝	.05	.04¾	.05
68-70 360 endpoint	.05	.05¼	.05	.05¼	.05¼	.05½
64-66 437 endpoint (blend)	.04	.04½	.04	.04½	.04¼	.04½
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.04⅜	.05¼	.04⅜	.05¼	.05	.05¼
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.04⅜	.05	.04⅜	.05	.04⅜	.05¼
PENNSYLVANIA—						
52-54 Naphtha	.06		.06		.06¼	
54-56 Naphtha	.06		.06		.06¼	.06½
58-60 Gasoline	.06¼	.06½	.06¼	.06½	.06½	
60 Gasoline	.06½		.06½		.06½	.06¾
62 Gasoline	.07		.07		.07	
64 Gasoline	.07	.07½	.07	.07½	.07	.07¾
68-70 350 endpoint gasoline	.07¾		.07¾		.08	
CALIFORNIA—						
†54-58 437 endpoint (U. S. Motor) domestic	.06½	.08¾	.06½	.08¾	.06½	.09
†58-62 400 endpoint domestic gasoline	.08	.09¾	.08¼	.10	.08¼	.10
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.04		.04		.04	
56-58 450 endpoint	.04	.04½	.04		.04	
58-60 437 endpoint (U. S. Motor)	.04¼	.04½	.04	.04½	.04	.04½
60-62 400 endpoint	.04½	.04¾	.04¼	.04¾	.04¼	.04⅞
64-66 375 endpoint	.04⅝	.05¼	.05¼	.05½	.05	.05½
64-66 437 endpoint (blend)	.04½	.04⅝	.04⅜	.04⅝	.04⅜	.04⅝
68-70 360 endpoint	.05¼	.05½	.05½	.06	.05¼	.05½
GULF COAST (Export)—						
58-60 U. S. Motor	.05⅛	.05¼	.05¼	.05¼	.05⅛	.05¼
60-62 400 endpoint	.05½		.05½		.05½	
61-63 390 endpoint	.05¾		.05¾		.05¾	
64-66 375 endpoint	.06		.06		.06	

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.

NATURAL GASOLINE

	Jan. 6		Dec. 30		Dec. 23	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.03¼		.03¼		.03½	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.03		.03		.03¼	
Grade B, 76-83.9, 375 e.p., rec. 85%	.02¾		.02¾	.03	.03	
Grade BB, 84-92,375 e.p., rec. 85%	.02½		.02¾		.03	
Grade C, 80-92, 375 e.p., rec. 78%	.02½		.02¾		.03	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.03¼		.03¼		.03½	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.03		.03		.03¼	
Grade B, 76-83.9, 375 e.p., rec. 85%	.02¾		.02⅝		.03	
Grade BB, 84-92, 375 e.p., rec. 85%	.02½		.02¾		.03	
Grade C, 80-92, 375 e.p., rec. 78%	.02½		.02¾		.03	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.03¼		.03¼		.03¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.02¾		.03		.03½	
Grade C, 80-92, 375 e.p., rec. 78%	.02¾		.03		.03¼	
CALIFORNIA—						
75-78 375-390 endpoint	.05	.06	.05¾	.06½	.05¾	.06½
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.03¼		.03¼		.03½	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.03		.03		.03¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.02½		.02¾		.03	

BURNING OIL

	Jan. 6		Dec. 30		Dec. 23	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.03	.03¼	.03	.03¼	.03	.03½
42-44 water white kerosene	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾
NORTH TEXAS—						
41-43 water white kerosene	.03	.03⅛	.03	.03⅛	.03	.03¼
40-41 water white kerosene	.02⅞	.03	.02⅞	.03	.02⅞	.03
***NORTH LOUISIANA—**						
41-43 water white kerosene	.03¾	.04	.03¾	.04	.03¾	.04
***ARKANSAS—**						
41-43 water white kerosene	.03¾	.04	.03¾	.04	.03¾	.04
PENNSYLVANIA—						
43 Kerosene prime white	.05		.05		.05	
45 Kerosene water white	.05¼		.05⅛	.05¼	.05⅛	.05¼
46 Kerosene water white	.05½	.05¾	.05½		.05½	
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.05	.06	.05	.06	.05	.06
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.03	.03¼	.03	.03¼	.03	.03¼
42-44 water white kerosene	.03¼	.03½	.03¼	.03½	.03¼	.03½
GULF COAST (Export)—						
41-43 prime white	.04½		.04¼		.04¾	
41-43 water white	.05¼		.05¼		.05¼	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

	Jan. 6		Dec. 30		Dec. 23	
OKLAHOMA (Group 3)—						
Below 18 gravity Fuel Oil, per bbl.	.40	.50	.40	.50	.40	.50
18-22 Fuel Oil, per bbl.	.47½	.55	.47½	.55	.47½	.55
20-22 Fuel Oil, per bbl.	.50	.60	.50	.60	.50	.60
22-26 Fuel Oil, per bbl.	.55	.65	.55	.65	.55	.65
24-26 Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
26-30 Fuel Oil, per bbl.	.70	.75	.70	.75	.70	.75
28-30 Fuel Oil, per bbl.	.80	.90	.80	.90	.80	.90
32-36 Gas Oil (industrial)	.02	.02¼	.02	.02¼	.02	.02¼
32-36 Gas Oil (straw color, high cold test)	.02¼	.02½	.02¼	.02½	.02¼	.02½
32-36 Gas Oil (straw color, low cold test)	.02⅝	.02⅞	.02⅝	.02⅞	.02⅝	.02⅞
36-38 Distillate	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
NORTH TEXAS—						
Below 20 gravity Fuel Oil, per bbl.	.30	.40	.30	.40	.35	.45
24-26 Fuel Oil, per bbl.	.50	.60	.50	.60	.50	.60
32-36 Gas Oil (industrial)	.02	.02¼	.02	.02¼	.02	.02¼
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.70	.75	.75	.80	.75	.80
30-32 Gas Oil (low cold test)	.02⅞	.03	.02⅞	.03	.02⅞	.03
***ARKANSAS—**						
33-36 Distillate	.02¾	.03	.02¾	.03	.02¾	.03
30-32 Gas Oil	.02⅝	.02¾	.02⅝	.02¾	.02⅝	.02¾
16-22 Refinery Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
GULF COAST (South Texas)—						
Gas Oil	.03⅛	.03¼	.03½	.03¾	.03½	.03¾
Bunker C Fuel (cargo lots), per bbl.	.65	.70	.67½	.75	.67½	.75
Bunker C Fuel (small lots)	.90		.90		.90	
PENNSYLVANIA—						
30-34 Fuel Oil	.03½		.03¼	.03½	.03¼	.03½
36-40 Fuel Oil	.03½		.03½		.03½	
CALIFORNIA—						
33-36 Distillate	.02	.02½	.02	.02½	.02	.02½
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-19 Fuel Oil, Bunker (at tidewater), bbl.	.55	.90	.55	.75	.55	.75
15-19 Fuel Oil (cargo lots, at tidewater), bbl.	.50	.80	.50	.80	.50	.80
†15-19 Fuel Oil, f.o.b. tank cars	.25	.70	.25	.50	.30	.55
27 plus Diesel, per bbl.	.80	1.05	.80	1.00	.85	1.05
30-34 Gas Oil	.85	1.05				
CHICAGO DISTRICT (Based on Group 3)—						
18-22 Fuel Oil, per bbl.	.57½	.62½	.55	.62½	.55	.60
22-26 Fuel Oil, per bbl.	.60	.65	.57½	.62½	.57½	.62½
28-30 Fuel Oil, per bbl. (zero)	.90	.95	.90	.95	.90	.95
32-36 Gas Oil (industrial)	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
32-36 Gas Oil (zero)	.02½	.02⅞	.02½	.02¾	.02½	.02¾
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03

*Louisiana, Arkansas, Mississippi and East Texas delivery. †Lowest priced fuel oil has high sulphur content.

LUBRICATING OIL AND WAX

	Jan. 6		Dec. 30		Dec. 23	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.05	.05½	.05	.05½	.05	.05½
100 vis., 3 color, 20-25 cold test	.04¾	.05	.04¾	.05	.04¾	.05
150 vis., 3 color, 20-25 cold test	.07		.07		.07	
150 vis., 4 color, 20-25 cold test	.06½		.06½		.06½	
180 vis., 3 color, 23-28 cold test	.08½		.08½		.08½	
180 vis., 4 color, 23-28 cold test	.08		.08		.08	
180 vis., 5 color, 23-28 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
200 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
200 vis., 4 color, 23-28 cold test	.09½		.09½		.09½	
200 vis., 5 color, 23-28 cold test	.09		.09		.09	
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 5 color, 25-30 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
280 vis., 3 color, 25-30 cold test	.15½		.15½		.15½	
280 vis., 4 color, 25-30 cold test	.14½		.14½		.14½	
280 vis., 5 color, 25-30 cold test	.13½		.13½		.13½	
Cylinder Stocks:						
600, steam refined, light green	.07	.08	.07	.08	.07	.08
600, steam refined, dark green	.04½	.05½	.04½	.05½	.04½	.05½
190-200 vis., D color, Bright Stocks	.25		.25		.25	
150-160 vis., D color, Bright Stocks 0-10 c.t.	.19	.20	.19	.20	.19	.20
150-160 vis., D color, Bright Stocks 10-25 c.t.	.18	.19	.18	.19	.18	.19
150-160 vis., D color, Bright Stocks 25-40 c.t.	.17½	.18½	.17½	.18½	.17½	.18½
150 vis., E color, Bright Stocks	.17	.18	.17	.18	.17	.18
Waxes:						
124-126 White Crude Scale Wax	.02	.02⅛	.02	.02⅛	.02	.02⅛

All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05½	.06	.05½		.05½	
34 Sundebloom	.05½	.06	.05½	.06	.05½	.06
36 Miners' Neutral	.04	.06	.04	.06	.04	.06
150, 3 color	.11½	.12	.11	.12	.11	.12
180, 3 color	.15	.15½	.15		.15	
200, 3 color	.17½	.18½	.16½	.18	.16½	.18
220, 3 color	.20	.20½	.20	.21	.20	.21
600, steam refined	.09		.09	.09¼	.09	.09¼
650, steam refined	.13½	.14½	.13½	.14½	.13½	.14½
600, Pennsylvania Flash	.14½	.16½	.14½	.16½	.14½	.16½
630, Pennsylvania Flash	.22	.23	.22	.23	.22	.23
600, E filtered	.14	.15	.15		.15	
600, D filtered, Oil City	.18	.19	.19		.19	
Pennsylvania Bright Stocks below 35 C.T.	.19	.21	.19		.20	
Pennsylvania Bright Stocks above 35 C.T.	.17		.17		.18	
*122-124 White Crude Scale Wax	.02½	.02⅜	.02⅜		.02⅜	
124-126 White Crude Scale Wax	.02⅜		.02⅜		.02⅜	

*At New York.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06	.06¼	.06	.06¼	.06	.06¼
200 vis., 3 color, pale oil	.08¼	.08½	.08¼	.08½	.08¼	.08½
300 vis., 3 color, pale oil	.09½	.09¾	.09½	.09¾	.09½	.09¾
500 vis., 3½ color, pale oil	.10¾	.11	.10¾	.11	.10¾	.11
750 vis., 3½ color, pale oil	.12¼	.12½	.12¼	.12½	.12¼	.12½
1,200 vis., 3½ color, pale oil	.14¾	.15	.14¾	.15	.14¾	.15
2,000 vis., 4 color, pale oil	.15¾	.16	.15¾	.16	.15¾	.16
200 vis., 5-6 color, red oil	.07½	.07¾	.07½	.07¾	.07½	.07¾
300 vis., 5-6 color, red oil	.08¾	.09	.08¾	.09	.08¾	.09
500 vis., 5-6 color, red oil	.10	.10¼	.10	.10¼	.10	.10¼

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

750 vis., 5-6 color, red oil	.11½	.11¾	.11½	.11¾	.11½	.11¾
1,200 vis., 5-6 color, red oil	.13¾	.14	.13¾	.14	.13¾	.14
2,000 vis., 6 plus color	.15¾	.16	.15¾	.16	.15¾	.16
CALIFORNIA—						
130 vis., 2½-3 color	.09	.09½	.09	.09½	.09	.09½
200 vis., 2½-3 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 3-3½ color	.10¾	.11½	.10¾	.11½	.10¾	.11½
350 vis., 3½-4 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
400 vis., 3½-4 color	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
Red Neutral:						
200 vis., 4½-5 color	.09½	.10	.09½	.10	.09½	.10
300 vis., 5-6 color	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
400 vis., 5-6 color	.11	.12	.11	.12	.11	.12
500 vis., 4½-5 color	.12¼	.13	.12¼	.13	.12¼	.13
500 vis., 5-6½ color	.12	.12¾	.12	.12¾	.12	.12¾
600 vis., 6½ plus color	.13	.14	.13	.14	.13	.14

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Jan. 6		Dec. 30		Dec. 23	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.07	.07½	.06¼	.06½	.06¼	.06½
Kerosene, water white, 41-43	.06	.06½	.06	.06½	.06	.06½
*Fuel Oil, Bunker "C," 41-43	1.05		1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	1.85		1.85		1.85	
Gas Oil, 28 gravity plus	.04¼	.05¼	.04¼	.05¼	.04¼	.05¼
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Domestic heating oil, min. 32 grav., tank car	.04½		.04½		.04½	
Refined Wax:						
120-122 a.m.p., per lb.	.03		.03		.03	
125-127 a.m.p., per lb.	.03¼		.03¼		.03¼	
130-132 a.m.p., per lb.	.03⅝		.03⅝		.03¾	
133-135 a.m.p., per lb.	.04¼		.04¼		.04¼	
135-137 a.m.p., per lb.	.04⅝		.04⅝		.04¾	
Petrolatum in barrels, in carload lots, per pound:						
Dark Green	.01¾		.01¾		.01¾	
Amber	.03¼		.03¼		.03¼	
Extra Amber	.03⅝		.03⅝		.03⅝	
Cream	.06		.06		.06	
Lily White	.06¾		.06¾		.06¾	
Snow White	.08		.08		.08	

*Lighterage 5 cents a barrel extra. †Lighterage 6.5 cents per barrel.

NEW YORK (BAYONNE) EXPORT PRICES

	Jan. 6	Dec. 30	Dec. 23
600, steam refined cylinder stocks, in bbls.	.16½	.16½	.16½
635, steam refined	.18½	.18½	.18½
650, steam refined	.23	.23	.23
600, Pennsylvania Flash	.23½	.23½	.23½
630, Pennsylvania Flash	.29½	.29½	.29½
600, Warren E	.23	.23	.23
600, Oil City E	.22	.22	.22
Light 140-150 Bright Stocks	.26	.26	.26
Dark 140-150 Bright Stocks	.24	.24	.24

LOS ANGELES EXPORT PRICES

	Jan. 6		Dec. 30		Dec. 23	
Kerosene, water white	.04¾	.06	.04¾	.06	.04¾	.06
*U. S. Motor Gasoline, 53-55, 437 e.p.	.04¾	.07	.04¾	.07	.04¾	.07¼
*60-62, 400 endpoint gasoline	.07	.08¼	.07	.08¼	.07	.08½

*For coastwise and off-shore shipments.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (Oct. 28).....$ .75
Other fields.....See gravity table

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties.....See gravity table

WEST TEXAS

Iatan*.....Same as North Texas
Crane-Upton-Crockett, Howard and Glasscock, Mitchell and Ector.....
.....See gravity table, Column 3
Pecos and Winkler.....
.....See gravity table, Column 9
Chalk† (April 10, 1930).....$ .75

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover (all grades) (Oct. 30, 1930.$ .70
Carterville, Sarepta and Cotton Valley, below 36 gravity.....See gravity table
Bellevue (Oct. 30, 1930)..... 1.00
Urania (Oct. 30, 1930)..... .75
Calion, heavy (Oct. 30, 1930)..... .70
East El Dorado (Oct. 30, 1930)..... .70
Other fields.....See gravity table

Note—Smackover and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Gulf Refining Co. and Magnolia Petroleum Co. Calion posted by Gulf Refining Co.

GULF COAST

Grade A (Oct. 28, 1930)*.....$1.00
Grade B, 35° and upward..See gravity table
Jennings, La. (Oct. 30, 1930)†..... .90
Refugio (light).....Same as Grade B
Refugio (heavy) (Oct. 28, 1930)*..... .75
Markham (Oct. 28)‡..... .85
High Island (Oct. 30, 1930)†..... .75

*Humble Oil & Refining Co. †Gulf Refining Co. of Louisiana. ‡Texas Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.

Iles (Feb. 15, 1930).....$ .87
32 gravity and above..... .87
Under 32 gravity..... .85
Dutton Creek (Oct. 28, 1930)..... 1.01
Rock Creek, Wyo. (Oct. 28, 1930)..... 1.01
Salt Creek.....See gravity table
Big Muddy (Oct. 28, 1930)..... 1.00
Grass Creek, heavy (July 27, 1928)..... .90
Grass Creek, light (Oct. 28, 1930)..... 1.25
Mule Creek (May 21, 1929)..... 1.20
Elk Basin (Oct. 28, 1930)..... 1.25
Lance Creek (Oct. 28, 1930)..... 1.33
Poison Spider (Mar. 14, 1927)..... 1.00
Notches (Mar. 14, 1927)..... .65
Rex Lake (Feb. 22)..... 1.10
Osage (Nov. 1, 1930)..... .85
Lost Soldier (Oct. 28, 1930)..... .80
Hamilton Dome (Mar. 14, 1927)..... .85
Greybull (Oct. 28, 1930)..... 1.25
Torchlight (Oct. 28, 1930)..... 1.25
Cat Creek (Oct. 28, 1930)..... 1.25
Pondera (Montana) (Oct. 28, 1930)..... 1.45
Sunburst (Montana) (Oct. 28, 1930)..... 1.55
Hogback (Feb. 15, 1930)..... 1.40
Artesia (New Mexico) (Oct. 28, 1930)..... .75
Lea County.....See gravity table
Border, Mont..... 1.55
Red Coulee, Alberta..... 1.55

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co. and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by

(Continued on Page 110)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Oklahoma-Kansas N. C. Texas	2 North La.-Ark.	3 Crane, Upton, Ector, Crockett, Howard, Glasscock, Mitchell (West Texas), Lea, N. M.	4 Wheeler County (Texas Panhandle)	5 Gray County (Texas Panhandle)	6 Carson and Hutchinson (Texas Panhandle)	7 Salt Creek, Wyo.	8 Stephens, Ark.	9 Pecos-Winkler (West Texas)	10 Grade B Gulf Coast and Refugio, Texas.
Below 25	.....	.....	.50	.....	.....	.....	.....	.....	.55	.75
25 to 25.9	.....	.....	.52	.....	.....	.....	.....	.....	.57	.92
26 to 26.9	.....	.....	.54	.....	.....	.....	.....	.....	.59	.94
27 to 27.9	.....	.....	.56	.....	.....	.....	.....	.....	.61	.96
28 to 28.9	.....	.....	.58	.....	.....	.....	.....	.....	.63	.98
Below 29	.65	.65	.....	.....	.50	.45	.....	.54	.....	.....
29 to 29.9	.69	.69	.60	.....	.54	.49	.69	.58	.65	1.00
30 to 30.9	.73	.73	.62	.....	.58	.53	.73	.62	.67	1.02
31 to 31.9	.77	.77	.64	.....	.62	.57	.77	.66	.69	1.04
32 to 32.9	.81	.81	.66	.....	.66	.61	.81	.70	.71	1.06
33 to 33.9	.85	.85	.68	.....	.70	.65	.85	.....	.73	1.08
34 to 34.9	.89	.89	.70	.....	.74	.69	.89	.....	.75	1.10
35 to 35.9	.92	.92	.72	.....	.77	.72	.92	.....	.77	1.12
36 to 36.9	.95	.95	.74	.....	.80	.75	.95	.....	.79	1.14
37 to 37.9	.98	.98	.....	.....	.83	.78	.98	.....	.....	1.16
38 to 38.9	1.01	1.01	.....	.....	.86	.81	.....	.....	.....	1.18
39 to 39.9	1.04	1.04	.....	.....	.89	.84	.....	.....	.....	1.20
40 and above	1.07	1.07	.....	.....	.92	.87	.....	.....	.....	1.22

Column 1—Carter Oil Co. posted above prices for Oklahoma and Kansas on October 28. Humble Oil & Refining Co. posted same for North Central Texas on October 28. Magnolia Petroleum Co. posted same for Kansas, Oklahoma and North Central Texas on October 27 from 29 degrees upward, but posted below 26 degrees at 53 cents; 26-26.9 degrees at 57 cents; 27-27.9 degrees at 61 cents; 28-28.9 degrees at 65 cents. Stanolind Crude Oil Purchasing Co. on November 1 adopted the schedule as listed in table; Prairie Oil & Gas Co. adopted the same on November 1, other companies following. North Central Texas, for the purpose of this table, includes North Texas, Ranger district, Mexia, Powell, Richland, Wortham, Van, Lytton Springs, Currie, Nocona, Moran and Corsicana (light oil). Prairie Oil & Gas Co. ceased purchasing crude oil at the close of business December 31, 1930. The Tidal Refining Co. and Pure Oil Co. began posting prices on January 1, 1930, in Oklahoma.

Column 2—The Texas Company posted above prices on Caddo and Red River crude, up to 39-39.9 degrees. It also posted 40-40.9 degrees at $1.07; 41-41.9 degrees at $1.10; 42-42.9 degrees at $1.13; 44-44.9 degrees at $1.16, and 44 degrees and above $1.19. Standard Oil Co. posted schedule as listed in table on October 30; Magnolia Petroleum Co. on October 30 posted prices as listed, starting at 29 degrees, but posted below 26 degrees, 53 cents; 26-26.9 degrees, 57 cents; 27-27.9 degrees, 61 cents; 28-28.9 degrees, 65 cents. Louisiana Oil Refining Co. adopted Standard of Louisiana prices on October 30. North Louisiana and Arkansas fields included in table are Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer, Cotton Valley, Sarepta-Carterville, El Dorado and Rainbow.

Column 3—Posted by Humble Oil & Refining Co. on October 28.

Column 4—Companies quit posting April 10, but crude takes present Hutchinson-Carson prices.

Column 5—Humble Oil & Refining Co., Magnolia and Prairie, October 28. Prairie ceased posting and purchasing in all Panhandle fields November 27.

Column 6—Humble Oil & Refining Co., October 28.

Column 7—Midwest Refining Co. on October 28. All crude over 37 degrees 98 cents.

Column 8—Louisiana Oil & Refining Co. and Atlantic Oil Producing Co., October 30.

Column 9—Humble Oil & Refining Co., October 28.

Column 10—Humble Oil & Refining Co., October 28. On October 30, Gulf Refining Co. of Louisiana and Gulf Pipe Line Co. of Texas posted as follows for Grade B: Below 25 degrees, 69 cents; 25-25.9 degrees, 71 cents, with a 2-cent differential for each degree upward to and including 40 degrees and above at $1.01. The Texas Company adopted above schedule November 1.

CALIFORNIA CRUDE OIL PRICES

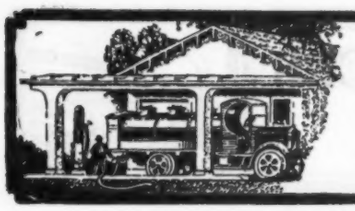
Standard Oil Co. (effective September 15, 1930), Union Oil Co. (effective September 15, 1930)

Gravity—	1 Long Beach, Seal Beach, Alamitos Hts., Huntington Beach, Inglewood, Torrance, Richfield, Olinda, Brea Canyon	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills	4 Montebello	5 Santa Fe Springs	6 Santa Maria, Coalinga	7 Wheeler Ridge	8 Orcutt, Ventura, Rincon	9 Ventura Avenue	10 Elwood Terrace	11 Athena, Rosecrans, Domingues
14 to 14.9	.70	.70	.55	.70	.....	.55	.55	.55	.70	.....	.....
15 to 15.9	.70	.70	.55	.70	.....	.55	.55	.55	.70	.....	.....
16 to 16.9	.70	.70	.55	.70	.....	.55	.55	.55	.70	.....	.....
17 to 17.9	.70	.70	.55	.70	.....	.55	.55	.55	.70	.....	.....
18 to 18.9	.76	.76	.62	.71	.....	.62	.62	.65	.76	.....	.....
19 to 19.9	.82	.82	.70	.77	.....	.70	.70	.70	.82	.....	.....
20 to 20.9	.88	.87	.78	.83	.....	.78	.78	.78	.88	.....	.....
21 to 21.9	.94	.93	.86	.90	.92	.86	.86	.90	.91	.....	.....
22 to 22.9	1.00	.98	.94	.97	.95	.94	.94	.95	.94	.....	.....
23 to 23.9	1.07	1.04	1.02	1.05	1.01	1.02	1.02	1.02	1.00	.....	.....
24 to 24.9	1.12	1.08	1.06	1.08	1.05	1.04	1.04	1.08	1.05	.....	1.12
25 to 25.9	1.17	1.12	1.10	1.11	1.09	1.06	1.06	1.11	1.10	.....	1.17
26 to 26.9	1.22	1.16	1.14	1.15	1.13	1.08	1.08	1 15	1.15	.....	1.22
27 to 27.9	1.26	1.21	1.18	1.19	1.18	1.11	1.10	.....	1.19	.....	1.27
28 to 28.9	1.30	1.25	1.22	1.23	1.23	1.15	.....	.....	1.23	.....	1.32
29 to 29.9	1.34	1.29	1.29	1.26	1.28	1.19	.....	.....	1.27	.....	1.37
30 to 30.9	1.38	1.33	1.35	1.29	1.33	1.23	.....	.....	1.31	.....	1.42
31 to 31.9	1.43	.....	1.40	.....	1.38	1.27	.....	.....	1.35	.....	1.47
32 to 32.9	1.48	.....	1.47	.....	1.43	1.31	.....	.....	1.41	.....	1.52
33 to 33.9	.....	.....	1.53	.....	1.48	1.36	.....	.....	1.47	.....	1.57
34 to 34.9	.....	.....	1.59	.....	1.53	1.39	.....	.....	1.53	1.32	1.62
35 to 35.9	.....	.....	1.65	.....	1.58	1.43	.....	.....	1.59	1.39	1.66
36 to 36.9	.....	.....	.....	.....	1.63	.....	.....	.....	.....	1.46	1.72
37 to 37.9	.....	.....	.....	.....	1.68	.....	.....	.....	.....	1.53	1.78
38 to 38.9	.....	.....	.....	.....	1.73	.....	.....	.....	.....	1.60	1.84
39 to 39.9	.....	.....	.....	.....	1.78	.....	.....	.....	.....	1.66	1.90
40 to 40.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.72	1.96
41 to 41.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.78	2.02
42 to 42.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.84	2.08

Note—Standard Oil Co. of California, effective December 18, 1930, established the following posted prices for oil purchased in the Playa Del Rey Field: 20-20.9 degrees 74 cents; 21-21.9 degrees, 77 cents; 22-22.9 degrees, 81 cents; 23-23.9 degrees, 84 cents; 24-24.9 degrees, 87 cents; 25 degrees and above, 90 cents. Union Oil Co. adopted same price schedule on December 18.

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain, 11 to 13.9 gravity, 50 cents; 14 gravity and above, 55 cents, effective March 11. On March 11 the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 50 cents. Fruitvale, posted by General Petroleum Co., 11-13.9, 50 cents; 14 gravity and above, 55 cents.

(Continued on Page 120)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Jan. 6

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago†	16.0	17.0	3.0	11.0
Decatur, Ill.	13.0	15.0	3.0	11.0
E. St. Louis	15.7	16.7	3.0	10.2
Joliet	16.4	17.4	3.0	11.0
Peoria	16.4	17.4	3.0	11.0
Quincy	16.2	17.2	3.0	10.8
Davenport, Ia.	16.5	16.5	3.0	11.3
Des Moines	16.5	17.5	3.0	11.3
Keokuk	16.5	17.5	3.0	11.3
Sioux City	16.1	16.9	3.0	10.9
Duluth, Minn.	17.5	17.5	3.0	11.9
Mankato	14.0	14.0	3.0	11.7
Minneapolis	17.0	18.2	3.0	11.9
La Crosse, Wis.	16.2	17.2	3.0	12.0
Milwaukee	15.1	16.1	3.0	10.9
Madison	15.3	15.3	3.0	11.1
Detroit, Mich.	16.8	17.8	3.0	12.7
Grand Rapids	15.7	16.7	3.0	12.6
Saginaw	14.3	14.3	3.0	12.8
Evansville, Ind.	17.1	18.1	4.0	11.9
Indianapolis	17.3	18.3	4.0	12.1
South Bend	17.4	18.4	4.0	12.2
Fargo, N. D.	18.9	19.9	3.0	13.9
Huron, S. D.	18.3	19.3	4.0	12.7
Sioux Falls	17.8	16.4	4.0	12.4
K. C., Mo.	15.9	16.9	3.0	9.6
Springfield*	15.9	16.9	3.0	10.5
St. Louis*	14.9	15.9	2.5	10.3
St. Joseph	15.6	16.6	3.0	10.1
Wichita, Kans.	14.8	15.8	3.0	9.8
Bartlesville, Ok.	15.5	18.5	4.0	9.5

*State tax 2 cents; remainder city tax.
†Effective June 3, discounts on Q.D.A. in Chicago district 4 cents off service station price on purchases of 500 gallons or more per month and 5 cents on purchases of 1,000 gallons or more per month.

Effective August 5, the following quantity discounts from the service station prices are allowed on monthly sales of gasoline: 500 gallons or more, 3 cents; 75,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Wh'ls'e price	Retail price	Incl'ds tax of	tank wagon
Fresno	23.0	21.0	3.0	17.0
San Francisco	23.0	21.0	3.0	15.5
Los Angeles	22.5	20.5	3.0	15.5
Reno, Nev.	28.0	26.0	4.0	19.0
Portland, Ore.	22.5	20.0	4.0	16.5
Seattle, Wash.	23.5	21.5	3.0	16.5
Tacoma	23.5	21.5	3.0	16.5
Spokane	27.5	23.0	3.0	20.5
Phoenix, Ariz.	19.5	23.5	4.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	20.0	21.0	6.0	13.5
Newark	13.5	14.5	2.0	10.5
Annapolis, Md.	16.0	17.0	4.0	11.0
Baltimore	15.2	16.2	4.0	9.5
Cumberland	17.0	18.0	4.0	12.0
Wash'gton, D.C.	13.7	14.7	2.0	10.7
Danville, Pa.	17.8	18.8	5.0	11.5
Norfolk, Va.	16.3	17.3	5.0	10.0
Petersburg	17.3	18.3	5.0	11.3
Roanoke	18.0	18.0	5.0	12.0
Richmond	16.7	17.7	5.0	10.7
Charles'n, W.Va.	16.5	17.5	4.0	11.5
Keyser	17.1	18.1	4.0	12.0
Parkersburg	15.2	16.2	4.0	10.2
Wheeling	16.4	17.4	4.0	11.4
Charlotte, N. C.	18.3	19.3	5.0	12.3
Hickory	18.6	19.6	5.0	12.6
Mt. Airy	18.5	19.5	5.0	12.5
Salisbury	18.5	19.5	6.0	12.5
Charleston, S.C.	17.3	18.3	5.0	10.3
Columbia	19.3	20.3	6.0	12.3

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	17.25	18.25	4.0	11.25
McCook	18.75	20.75	4.0	12.75
Norfolk	17.25	17.25	4.0	11.75
N. Platte	18.75	20.75	4.0	12.50
Scottsbluff	18.75	20.75	4.0	12.25

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	16.5	18.5	6.0	12.0
Baton Rouge	17.5	19.5	5.0	12.0
Alexandria†	18.5	20.5	6.0	13.0
Lafayette*	18.5	20.5	6.0	13.0
Lake Charles*	18.5	20.5	6.0	13.0
Shreveport	17.5	19.5	5.0	13.0
Knoxville Tenn.	19.0	21.0	5.0	15.0
Memphis	17.0	19.0	5.0	12.5
Chattanooga	18.5	20.5	5.0	13.0
Nashville	18.0	20.0	5.0	15.0
Bristol	20.0	22.0	5.0	14.0
Lt. Rock, Ark.	16.0	18.0	5.0	12.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.
†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

One-cent discount allowed off station price on all cash purchases. All other station discounts withdrawn October 2, 1930.

Two-cent discount off gasoline tank wagon price to dealers and commercial accounts.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points*	16.0	17.0	4.0	†13.0

*Dealers and commercial accounts 2 cents under tank wagon.
†Service station price 14 cents.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	14.0	19.0	...	12.0
Philadelphia	14 0	19.0	...	12.0
Scranton	14.0	19.0	...	12.0
Allentown	14.0	19.0	...	12.0
Altoona	14.0	19.0	...	12.0
Erie	14.0	18.0	...	11.0
Dover, Del.	17.0	19.0	3.0	12.0
Wilmington	17.0	19.0	3.0	12.0
Springf'd, Mass.	17.5	19.5	2.0	10.0
Worcester	17.3	19.3	2.0	10.0
Boston	14.5	16.5	2.0	10.0
Providence, R.I.	13.7	14.7	2.0	10.0
Hartford, Conn.	17.5	19.5	2.0	10.0
New Haven	17.6	19.6	2.0	10.0

*Includes tax of 3 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	20.0	21.0	6.0	13.5
Augusta	20.0	22.0	6.0	15.5
Macon	20.0	22.0	6.0	13.0
Savannah	17.0	17.0	6.0	14.0
Birm'ham, Ala.	17.0	18.0	5.0	14.5
Mobile	17.0	19.0	4.0	10.5
Montgomery	17.0	18.0	4.0	15.0
Clarks'le, Miss.	18.0	18.0	5.0	11.0
Jackson	15.0	17.0	5.0	13.0
Natchez	18 0	20.0	5.0	12.0
Gulfport	18.0	20.0	5.0	13.0
Vicksburg	18.0	20.0	5.0	13.0
Jack'ville, Fla.	17.0	19.0	6.0	14.0
Miami	19.0	21.0	6.0	14.0
Pensacola	19.0	19 0	6.0	13.5
Tampa	18.0	20.0	5.0	13.0
Lexington, Ky.	17.0	18.0	5.0	14.5
Covington	17.0	18.0	5.0	13.5
Louisville	16.0	18.0	5.0	11.0
Ashland	17.0	19.0	5.0	13.0
Paducah	17.0	19.0	5.0	12.0
Bowling Green	19.0	21.0	5.0	14.5
Corbin	19.0	21.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery, Birmingham and Mobile state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	15.6	17.6	2.0	15.6
New York*	14.3	15.3	2.0	14.3
Buffalo	14.8	15.8	2.0	14.8
Rochester	15.0	16.0	2.0	14.0
Syracuse	15.8	16.8	2.0	14.8
Boston, Mass.	14.5	15.5	2.0	13.5
Augusta, Me.	17.8	18.8	4.0	14.8
Manch't'r, N.H.	17.4	18.4	4.0	14.0
Burlington, Vt.	18.3	19.3	4.0	15.3

*Prices in steel barrels.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	14.0	17.0	4.0	11.0
Fort Worth	14.0	17.0	4.0	10.0
Houston	15.0	19.0	4.0	11.0
San Antonio	13.0	17.0	4.0	10.0
El Paso	16.0	20.0	4.0	12.0
Texarkana	17.0	17.0	4.0	11.0
Muskogee, Ok.	15.0	18.0	4.0	9.0
Okla. City	13.0	16.0	4.0	10.0
Tulsa	13.0	17.0	4.0	10.0
Ft. Smith, Ark.	17.5	18.5	5.0	12.0
Little Rock	16.0	17.0	5.0	12.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	12.0	15.0	4.0	13.5
Pueblo	14.0	17.0	4.0	13.5
Grand Junction	15.0	19.0	4.0	17.0
Casper, Wyo.	17.0	20.0	4.0	12.0
Cheyenne	15.0	21.0	4.0	13.5
Butte, Mont.	19.0	22.0	5.0	15.0
Billings	20.0	23.0	5.0	16.5
Great Falls	20.0	23.0	5.0	15.0
Helena	20.0	23.0	5.0	15.0
Salt Lake, Utah	19.0	22.0	3.5	17.0
Albu'que, N. M.	16.0	20.0	5.0	14.0
Boise, Idaho*	22.5	....	5.0	19.0
Twin Falls†	22.5	....	5.0	19.5

*Two and one-half cents off tank wagon to dealers at time of delivery. †Three cents off tank wagon to dealers at time of delivery.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oils discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	12.0	8.0
V.M.&P. naphtha	14.0	9.5
Cleaners' naphtha	16.2	11.0
Stanisol	16.2	11.0

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

TANK WAGON CHANGES

Standard Oil Co. of Indiana posted tank wagon price of 17.3 cents, and service station price of 18.3 cents, at Indianapolis, an increase of 1-cent for each, January 3. Standard Oil Co. of Kentucky, effective December 22, reduced tank wagon price 1 cent to 17 cents, and service station price to 18 cents, a 2-cent reduction, at Covington, Ky. This company, effective December 23, made the same reductions at Savannah, Ga., posting 17 cents for both tank wagon and service station prices. At Paducah, Ky., Standard of Kentucky posted tank wagon price at 17 cents, and service station price at 19 cents, representing an advance of 1 cent in each case, effective December 24. The company also reduced the kerosene tank wagon market 2 cents at Catlettsburg and Ashland, making the price at these points 13 cents, December 18. On December 25, the kerosene market was reduced 1 cent to 11 cents at Louisville. At Covington the kerosene price was reduced from 14.5 to 13.5 cents, December 22.

Magnolia Petroleum Co. increased the gasoline tank wagon and service station markets 2 cents to 17.5 and 18.5 cents, December 18, at Fort Smith, Ark.

Continental Oil Co. reduced gasoline tank wagon price 1 cent to 12 cents, December 29, at Denver, Colo., and the service station price was lowered 2 cents to 15 cents. At Salt Lake City, Utah, Continental posted 19 cents for the tank wagon market, a 1-cent reduction, December 18.

Standard of Indiana on January 3 posted 1-cent increases in the tank wagon gasoline market at three points, making the prices, Des Moines, 16.5; Kansas City, 15.9, and Huron, S. Dak., 18.3. Service station prices were also increased,

(Continued on Page 116)

CRUDE OIL PRICE CHANGES

The Joseph Seep Purchasing Agency lowered the price of Corning, Ohio, oil in Buckeye pipe lines to $1.15, effective December 31.

The Continental Oil Co. lowered its price for Artesia, N. Mex., oil to 50 cents per barrel, effective January 1.

CRUDE OIL PRICES

(Continued from Page 109)

Producers & Refiners Corp. Artesia posted by Ohio Oil Co. and Continental Oil Co. Latter company posted 50 cents per barrel January 1, 1931. Border and Red Coulee posted by Imperial Refining Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Oct. 28, 1930)*	$0.90
Luling (Oct. 28, 1930)†	.75
Mirando (Oct. 28, 1930)*	.75
Pettus (Oct. 28, 1930)*	1.10
Salt Flat (Oct. 28, 1930)*	.90
Thrall‡	...
Lytton Springs (Lockhart). See gravity table	
Dobrowolski (Oct. 25, 1930)‖	...
Same as Mid-Continent gravity scale up to and including 38-38.9° at	1.01
Somerset (Oct. 25, 1930)¶	...
Same as Mid-Continent gravity scale up to and including 38-38.9° at	1.01

*Posted by Humble Oil & Refining Co. and Magnolia Petroleum Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall price same as North Central Texas less 19½ cents per cwt. freight. ¶Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products Co. ‖Pioneer Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective Nov. 12, 1930)

Seep Purchasing Agency withdrew from Bradford and Allegany Fields as a purchaser on May 16.

Penna Grade Oil in National Transit Lines (Pennsylvania)	$1.85
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania)	1.80
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.70
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) (Sept. 14, 1930)	1.45
Corning Grade Oil in Buckeye Pipe Line Co.'s Lines (Dec. 31, 1930)	1.15
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky)	1.10
Wayne District Oil in Cumberland Pipe Lines	1.17

Tide Water Pipe Co.

Bradford district (Nov. 12, 1930)	2.15
Allegany district (Nov. 12, 1930)	2.15

Pure Oil Co.

Cabin Creek, W. Va. (Nov. 13, 1930)	$1.70
Kelly Creek, W. Va. (Nov. 13, 1930)	1.70
Bradford Hollow, W. Va. (Nov. 13, 1930)	1.70

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective Oct. 28, 1930)

Lima	$1.10
Wooster	1.40
Illinois	1.80
Indiana	.87
Princeton	1.30
Plymouth	.89
Western Kentucky	1.35
Midland, Mich.*	1.10
Dundee, Mich. (Oct. 26)‖	...
Same as Mid-Continent gravity scale	
Upper and Lower Traverse Sands, Mich. (Oct. 28)‖	...
Same as Mid-Continent gravity scale	
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (Oct. 28)‡	.85
Oil City, Ky.§	1.10
Oil Springs (Canada) (Oct. 28)¶	1.67
Petrolia (Canada) (Oct. 28)¶	1.59

*Posted by Pure Oil Co. ‡Posted by Paragon Development Co. §Posted by Stoll Refining Co. ¶Posted by Imperial Oil., Ltd. ‖Posted by Standard of Indiana for best shipment.

MEXICAN CRUDE

Panuco*	$0.84

*F.o.b. ship, based on November transactions and exclusive of taxes and bar dues.

PETROLEUM JELLY . . . a familiar friend in every household . . . is the same sticky salve that makes motor oils thick and sluggish in winter.

The great Sinclair refineries, with modern refrigerators and separators, remove this paralyzing petroleum jelly from Sinclair Opaline at as low as 60° F. below zero. (Opaline is guaranteed to flow at zero.) With Opaline your customers are not forced to change to "light" motor oils for easy starting in winter!

Opaline is refined from paraffin base crudes according to the Sinclair Law of Lubrication. (Write for booklet explaining this famous Sinclair Law . . . it's a sensational sales builder you shouldn't overlook!)

This is the story and above is the girl who'll carry it into millions of homes from coast to coast. Cash in on the sweeping Opaline sales.

* * *

Send a post card to our nearest office and a Sinclair salesman will tell you all about it. Sinclair Refining Company (Inc.), New York, Atlanta, Chicago, Fort Worth, Houston, Kansas City. Sinclair Refining Company of Canada, Ltd., Toronto. Sinclair Refining Company of California, Los Angeles.

SINCLAIR OPALINE

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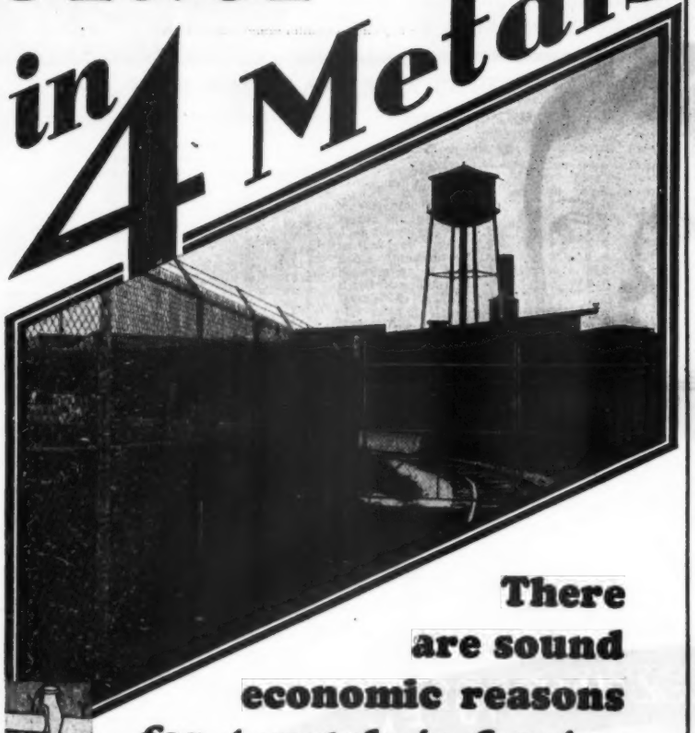
MOTOR OIL

PAGE FENCE in 4 Metals



There are sound economic reasons for 4 metals in fencing

IN Industry there is no such thing as a "Good all-round fence." The right selection for one locality would be foolish extravagance in another. J. Wallace Page knew that, way back in 1883, when he started building fence *intelligently adapted to conditions under which it is used.* And PAGE Engineers have carried on for forty-eight years.

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PAGE FENCE

CHAIN LINK OR ORNAMENTAL WROUGHT IRON

REFINERY OPERATIONS CONTINUE STEADY

(Continued from Page 22)

REFINERY OPERATIONS IN NORTH CENTRAL TEXAS

(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Jan. 1	Runs Dec. 1
American Refining Properties, Wichita Falls	6,000	3,400	3,500
Archer Refining Co., Megargel	2,000	650	650
Central Texas Refining Co., Angus	4,000	(*)	(*)
Central Texas Refining Co., Minerva	2,000	700	600
Continental Oil Co., Wichita Falls	6,000	3,000	3,000
Dale Oil & Refining Co., Electra	4,000	3,400	3,800
Empire Oil & Refining Co., Gainesville	5,000	3,600	3,600
Falls Refining Co., Wichita Falls	2,000	1,000	1,000
Gulf Refining Co., Fort Worth	10,000	6,000	6,000
Humble Oil & Refining Co., Breckenridge	2,000	700	600
Humble Oil & Refining Co., Chilton	4,000	700	1,000
Humble Oil & Refining Co., Neches	5,000	1,240	1,000
Iowa Park Producing & Refining Co., Iowa Park	2,500	1,700	1,500
LaSalle Petroleum Co., Burkburnett (Noble)	3,500	(*)	(*)
Macmillan Petroleum Co., Isom	8,000	5,000	5,000
Magnolia Petroleum Co., Fort Worth	12,000	4,200	4,500
Magnolia Petroleum Co. (White Eagle plant), Fort Worth	6,000	3,000	2,500
Magnolia Petroleum Co., Corsicana	5,000	4,200	4,000
Marathon Oil Co., Fort Worth	5,000	3,000	3,500
Olney Oil & Refining Co., Olney	2,500	2,100	2,000
Oriental Oil Co., Dallas	5,000	600	1,000
Atlantic Pacific and Gulf Refining Co., Wichita Falls	2,500	1,500	200
Panhandle Refining Co., Wichita Falls	5,000	4,250	3,700
Petroleum Refractionating Co., Pampa	5,000	5,000	5,000
Phillips Petroleum Co., Isom	15,000	10,000	10,000
Primrose Refining Co., Wichita Falls	2,500	2,000	2,000
Simms Oil Co., West Dallas	5,000	2,000	2,000
Southland Refining Co., Olney	1,000	500	200
Star Refining & Producing Co., Fort Worth	1,800	500	500
Superior Refining Co., Tiffin	2,000	1,000	(*)
Tarrant Petroleum Co., Grand Prairie	2,500	(*)	(*)
Taylor Refining Co., Taylor	6,000	3,300	3,700
Taxman Refining Co., Wichita Falls	2,500	2,300	2,000
The Texas Company, Dallas	16,000	16,000	16,000
The Texas Company, Amarillo	4,000	4,000	4,000
Tidal Western Refining Co., Burkburnett	3,000	2,000	2,000
Texas Pacific Coal & Oil Co., Fort Worth	3,000	1,800	1,900
Texas Pacific Coal & Oil Co., Caddo	1,200	450	500
Waggoner Refining Co., Electra	3,400	1,400	2,000
Wilcox Oil & Gas Co. (Pampa Refining Co.), Pampa	4,000	2,500	2,500
Total	186,900	108,690	107,050

*Shut down.

REFINERY OPERATIONS IN NORTH LOUISIANA

(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Jan. 1	Runs Dec. 1
Bayou State Refining Co., Hosston	750	500	600
Crystal Oil Refining Corp., Shreveport	14,000	(*)	(*)
Louisiana Oil Refining Co., Shreveport, Bossier	24,000	17,700	12,800
Shreveport-El Dorado Pipe Line Co., Shreveport	10,000	5,800	7,100
Stanolind Oil & Gas Co., Superior	3,500	2,800	3,100
The Texas Company, Shreveport	7,000	(*)	(*)
Total	59,250	26,800	23,600

*Shut down.

REFINERY OPERATIONS IN ARKANSAS

(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Jan. 1	Runs Dec. 1
James H. Berry & Sons, Waterloo	2,000	1,200	1,200
Henry H. Cross Co., Smackover	6,000	4,000	4,000
Houston Oil Co., Camden	6,000	3,100	2,200
Kettle Creek Refining Co., Pearson	5,000	1,700	1,600
Lion Oil & Refining Co., El Dorado	12,000	6,000	6,000
Macmillan Petroleum Products Co., Norphlet	1,800	1,500	1,600
Ouachita Valley Refining Co., El Dorado	2,000	1,000	1,000
Root Refining Co., El Dorado	10,000	5,650	5,700
Simms Oil Co., Smackover	3,000	2,000	2,000
Total	47,800	26,150	25,300

SMALL WELLS NEED NOT BE ABANDONED

(Continued from Page 25)

is sufficient to handle several additional wells, and the tankage is enough to handle additional oil, so there would be no added cost at the lease or in the office if more production were made.

The pipe lines would not object to taking more oil for it would not add to their expense in operation, and they would gain in income from handling charges, so they would profit by such addition to the output from this area.

The wells would have to be drilled about 1,500 feet deep and drilling machine contractors will do this work for about $1.50 per foot or the well would cost about $2,250 and with the sand charged with gas that has been pumped into it for the past two years it should start off with a comparatively large flow.

If such a new well only makes 10 bbls. per day at the present market price of 32 gravity oil it would pay out in less than a year, and after that time the added production would be profit. Or the cost of drilling such new wells could be charged off over a longer period of time and part of the increased income set aside for improvements or reserves, or even to pay some dividends to the stockholders.

This kind of work would require the careful analysis of conditions by geologists and engineers, but there seems to be excellent opportunity for investors to make some real money in these old fields by working them over and increasing production, and the rate of returns will be much greater on the whole than will be secured from investments in deep drilling and flush production, which in the last analysis really is work that should be left entirely to the operators who have ample capital and a complete organization to handle projects of large magnitude.

There are thousands of acres of oil land in the Mid-Continent and in many of the eastern fields that will stand very careful investigation along the lines outlined above, and there are now many wise operators who are satisfied to make good interest on their money by handling such properties rather than take long chances of getting a gusher in deep territory that is not proven, or drilling in highly competitive areas where the new oil produced has the effect of lowering the prices of crude because of the enormous amounts made available.

The industry has in the past been striving to build up a reserve and now that that end has been achieved, it seems only logical that the operators should turn back to working over old pools where it is known that the extraction of oil from the sands to date is less than 20 per cent of the estimated saturation and by applying modern methods to the whole problem increase the yield from such areas and in this way conserve the flush production of other fields for future uses.

Acknowledgment is made to Cash M. Young, superintendent for the Nowata Oil & Refining Co., for the facts contained in this article and for permission to examine the property and secure photographs. The lease is now in charge of William Eddingfield, pumper, who lives on the property. The Nowata Oil & Refining Co. has other leases in this area as well as Bristow and Mr. Young is in charge of all field operations.

THE LUMMUS COMPANY

A DELAWARE CORPORATION

has acquired the business of The Walter E. Lummus Co.

THE LUMMUS COMPANY
is owned by those previously
active in The Walter E. Lummus Co.
and by
THE SUPERHEATER COMPANY
and
THE BABCOCK & WILCOX CO.

The engineering, manufacturing and financial facilities of these latter companies will be available to THE LUMMUS COMPANY in the design, manufacture and installation of

REFINERY EQUIPMENT FOR THE PETROLEUM & CHEMICAL INDUSTRIES

148 STATE STREET, BOSTON, MASS. · · 30 CHURCH STREET, NEW YORK

BETTER FEELING IN EAST COAST MARKET

(Continued from Page 103)

at the principal United States ports for the week ended Decemb~ 27 totaled 1,913,000 bbls., a daily ave..ge of 273,285 bbls., compared with 1,368,000 bbls., a daily average of 195,428 bbls. for the previous week and a daily average of 245,714 bbls. for the four weeks ended December 27. Details follow:

(Barrels of 42 Gallons)

At Atlantic Coats Ports—	
Baltimore	203,000
Boston	193,000
New York	1,071,000
Philadelphia	178,000
Others	138,000
Total	1,783,000
Daily average	254,714
At Gulf Coast Ports—	
Galveston district	64,000
New Orleans and Baton Rouge..	66,000
Total	130,000
Daily average	18,571
At all United States Ports—	
Total	1,913,000
Daily average	273,285
Daily average four weeks	245,714

Distribution of total imports is as follows:

Crude	1,060,000
Gasoline	114,000
Fuel oil	739,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended December 27 totaled 249,000 bbls., a daily average of 35,571 bbls., against 399,000 bbls., a daily average of 57,000 bbls. for the previous week, and a daily average of 55,464 bbls. for the four weeks ended December 27. Details follow:

(Barrels of 42 Gallons)

At Atlantic Coast Ports—	
Boston	37,000
New York	178,000
Others	34,000
Total	249,000
Daily average	35,571
At Gulf Coast Ports—	
All ports	none
At Atlantic and Gulf Coast Ports—	
Total	249,000
Daily average	35,571
Daily average four weeks	55,464

Distribution of total California oil receipts is as follows:

Gasoline	64,000
Kerosene	62,000
Fuel oil	112,000
Lubricants	11,000

Shipments of California refined products from Atlantic and Gulf Coast ports during the week (with identity of owner moving the oil where such owner is an oil company) were as follows:

To New York—74,300 bbls. of distillate on the Algonquin (Standard Oil Co. of New York); 97,000 bbls. of gasoline on the India Arrow (Standard Oil Co. of New York); 65,000 bbls. of Diesel oil on the Eagle (Standard Oil Co. of New York); 45,000 bbls. of gasoline on the Pueblo; and 146,700 bbls. of gasoline on the Australia.

To Baltimore—80,700 bbls. of gasoline on the Agwiworld and 51,200 bbls. of gasoline on the Kekoskee (Richfield Oil Co. of California).

To Philadelphia—80,000 bbls. of gasoline on the S. C. T. Dodd (Standard Oil Co. of California).

ROCKY MOUNTAIN AREA

(Continued from Page 48)

Muddy to test lower horizons, is drilling at 4,877 feet and probably is in the top of the Morrison formation. The Standard Oil Co. of Colorado's No. 1 Hertha, NW cor., Section 21-4n-69, Berthoud Dome, is drilling at 3,400 feet and carrying the 6¼-inch. It had good shows of oil and gas in the Frontier and is drilling to the Muddy.

Moffat County

The Mountain Fuel Supply Co.'s No. 2 State, SE NE, Tract 37-12n-100, Hiawatha Dome, is standing at 1,285 feet with the 15½-inch cemented on bottom. The Texas Production Co.'s No. 4 Wick, NW NW, Section 10-4n-91, Moffat Dome, is drilling at 4,678 feet with the Sundance as the objective.

Garfield County

The Fulton Petroleum Co., which recently completed a gas well on the Garmesa Dome, has announced its intentions of drilling two more wells this spring. The public utilities commission recently rendered an adverse decision on its application for a permit to build a pipe line to supply Grand Junction, Fruita and other towns with natural gas, but the company anticipates a more favorable attitude on the part of the commission when it is fully ready to begin transporting gas.

WYOMING

Converse County

The Phillips Petroleum Co. is expected to do some important wildcatting in southeastern Wyoming next spring as a result of interesting developments in extensive geological work which it has had under way for some time. The Northern Oil Co. of Denver, of which Robert G. Taylor is president and with whom a number of Denver men are associated, blocked up more than 60,000 acres in the Shawnee district in Converse County between Douglas and the Lance Creek Field and made arrangements with the Phillips company to investigate the possibilities of structures in that area. The company had a corps of geologists in the field the past summer checking the area and this was followed by extensive magnetometer testing and then core drilling. This work was in charge of D. J. Wolff of Wichita, geologist and engineer for the Phillips company. Altogether nine core holes have been drilled and in one of these on Section 27-32-69, 6 miles northeast of Orin Junction and 12 miles southeast of Douglas, it is reported that a flow of 1,000,000 feet of gas per day was encountered at around 700 feet in the top of the Cretaceous formation, probably in the Shannon sand. This test will be completed as a gas well and the gas used for fuel in drilling a deep test. The territory around Douglas was drilled more than 10 years ago, but no new pools were discovered. However, faith in that district has never abated and recently there has been considerable interest manifested in its possibilities. The Phillips company has taken over 30,000 acres in one block and has options on considerably more acreage from the Northern Oil Co. The Shawnee district is to the southwest of the Lance Creek Field and a major fault traverses the region to the west of Lance Creek and on the eastern side of the Shawnee structure. This structure is geologically higher than Lance Creek and the discovery of gas in the core-drilling operations makes the outlook for deep drilling very promising. The Reiter-Foster Oil Co. also is reported to have acquired acreage in the new district and the Midwest Refining Co. and the Texas Production Co. have had scouts and lease men at work.

Big Horn County

The Ohio Oil Co. has made a location and is building rig for its No. 1 Smith on Lot 61, Section 35-56-97, on the Garland Dome. This is the same section upon which the company drilled its No. 1 Easton, which was completed the past fall at a depth of 4,442 feet with an estimated capacity of better than 5,000 bbls. a day. This was a joint operation with the Utah Southern Oil Co. and proved the Madison lime to be highly productive on the structure. Discoveries made during 1930 in wildcats and in wells drilled to deeper horizons is attracting considerable attention to the Big Horn Basin and Howard F. Bell, Cody, Wyo., civil engineer and county surveyor, has met the demand for maps of structures in that area by preparing two detailed maps. One was prepared particularly to show Byron, Garland, Polecat, Frannie, Sage Creek and Cowley structures. This map is 35"x38" in size and is drawn to a scale of 1 inch to 3,000 feet. The other map covers the Badger Basin structure and adjoining territory. The maps show the structural contours in detail as worked out by the various geologists, location of wells drilled and drilling, ownerships of patented and leased land of operating companies, rivers, towns, pipe lines and all details necessary to the making of an unusually complete map. They are available to the oil men and information as to prices may be obtained from Mr. Bell by addressing him at Cody.

Park County

The Resolute Oil Co.'s No. 1, NE SW NE, Section 17-57-101, Badger Basin, was expected to begin drilling out cement the first of this week after setting the 6⅝-inch at 8,266 feet, but results have not yet been learned. This well is reported to have headed up several times while the string was being run. The oil tests 45° gravity and is coming from the Frontier. This hole, the deepest in the Rocky Mountain area, gives excellent promise of opening a new and important light oil field. The tools are in the hole and an attempt will be made to sidetrack them.

The Midwest Refining Co.'s No. 31 Rosenberg, SW SE, Section 24-58-98, Frannie Dome, is drilling at 3,115 feet in red shale and is supposed to be nearing the Madison lime.

Natrona County

A completion in Salt Creek was reported this week in the Midwest Oil Co.'s No. 8-SD-3, SE, Section 26-40-79, at a total depth of 2,995 feet, 5 feet in the third bench of the Sundance, with a production of 683 bbls. the first 24 hours without being shot. The Wyoming Associated Oil Co.'s No. 29-SD-3, NW NE, Section 26-40-79, is bottomed at 2,922 feet and is spooling line, and its No. 26-SD-3, NW, Section 26-40-79, is drilling at 1,496 feet in shale.

The Midwest Refining Co.'s No. 11, SE NW NW, Section 32-34-77, Geary Dome, is drilling at 4,700 feet and is expected to reach the first Wall Creek within the next 100 feet. The work of coring the North Geary, or middle dome, to work out the structural contours has been completed and the formations are being correlated preliminary to making a location for a test. This structure is between the Midway and the North Geary Domes, the three structures to be operated under a co-operative development program by the Midwest Refining Co. and affiliated interests.

Niobrara County

The Argo Oil Co.'s No. 2 Ford, SW SE, Section 33-36-65, Lance Creek, has been completed as a 5,000,000-foot gas well in the second bench of the Dakota at a total depth of 3,390 feet. It also had 5,000,000 feet of gas in the first bench.

Fremont County

The Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, is bottomed at 4,485 feet and is sidetracking 6⅝-inch casing at 4,200 feet. The Producers & Refiners Corp.'s No. 10, NW cor., Section 14-32-95, Sand Draw, is drilling at 4,007 feet in black shale.

Carbon County

The Midwest Refining Co.'s No. 27 Union Pacific, SE SE, Section 11-20-81, Elk Mountain, landed the 13-inch on bottom at 1,810 feet in gray shale and shut down for the winter. The Producers & Refiners' No. 3, SE NW, Section 2-19-88, Hatfield Dome, is drilling at 4,495 feet in coarse gray sand.

Sublet County

The Circle Oil Co.'s No. 2 Elkhorn Oil, N half NE, Section 17-27-113, has been completed in sand at 2,040-2,196 feet and made 90 bbls. on the pump in 14 hours without lowering the oil in the hole. The oil is a much better grade than expected and tested 46.4° gravity. The location of this well is 3 miles north of production in the LaBarge Field and opens some good territory for prospecting. The Elkhorn Oil Co., which owns the lease, was one of the earlier operators in the Big Muddy Field.

UTAH

The Utah Southern Oil Co.'s No. 1 Balsey, C NE NE, Section 31-23-21, Salt Valley Dome, is drilling at 100 feet after cementing the 15½-inch at 76 feet. The Diamond Oil Co.'s No. 1, SE NW, Section 16-8s-5e, Utah County, is resuming at 3,000 feet after being idle over the holidays.

MONTANA

The Western Natural Gas Co. drilled in a large gas well in a wildcat area in northern Montana the past week. The well is on Section 21-37-4, in Liberty County, just over the county line from Toole County and the nearest rail point is Chester, about 35 miles to the southeast. The cold weather prevented a measurement being taken. The well is estimated good for 10,000,000 feet daily and the rock pressure is 700 pounds. The sand was found at 2,055 feet and the hole is bottomed at 2,060 feet. The well is near Whitlash, a small town near the west line of Liberty County.

Big Horn County

The Continental Oil Co.'s No. 2 Lynde, SW cor. SE, Section 21-6s-35e, Lodgegrass Creek Dome, is shut down at 3,395 feet and probably will be abandoned. The Selig Oil Co. originally started a test on the NW SW SE of Section 21 and lost the hole at 1,300 feet. The rig was then skidded to the location for No. 2 Lynde and after spudding was taken over by the Texas-Montana Production Co., which company subsequently turned it over to the Continental company for completion. It had a small show of gas and some water at 1,080-82 feet in a stray sand; 200,000 feet of gas in brown shale at 1,410 feet, and small shows of gas in the Claggett shale at 2,620-25 feet. The Muddy and Dakota were logged at 3,300 to 3,400 feet.

Carbon County

The Ohio Oil Co.'s No. 3 Montana Industrial, SE cor. NW, Section 11-7s-21, Dry Creek, is drilling at 1,036 feet. Two other operations by this company which have rigs up will not spud until spring.

Pondera County

Hawley and others' No. 2 State, SE cor., Section 16-27n-4w, Pondera Field, is testing a small show of gas at 2,008-18 feet.

Toole County

The International Royalty Holding Co.'s No. 1 Henry, SW cor., Section 26-35-3e, Grandview, is underreaming the 8¼-inch at 2,450 feet to set at 2,455 feet. The Montana Oil Co.'s No. 2 Buckley, NE SE NW, Section 1-37-4e, Border Field, was abandoned at 2,580 feet. The Vanalta sand at 2,450 feet was dry and the Cosmos sand at 2,530 feet had water and a small show of gas. Drilling operations in the Buckley-Border Field are shut down for the winter.

Rosebud County

The Prairie Oil & Gas Co.'s No. 1-X N. P., Contract 3, Section 26-10n-39, Porcupine Dome, is drilling at 2,005 feet, and its No. 1, Contract 4, SW SW, Section 28-11-39, is drilling at 1,300 feet.

Rocky Mountain Production

Average daily runs from fields week ending January 3:

WYOMING	
Salt Creek	28,130
Big Muddy	1,910
Grass Creek	1,940
Elk Basin	660
Dallas	380
Frannie	830
Hudson	190
Lovell	10
Teapot	20
Warm Springs	90
Rock River	2,060
Lance Creek	140
LaBarge	1,990
Poison Spider	250
Oregon Basin	2,890
Osage	1,200
Ferris	40
Byron	10
Lost Soldier	4,380
Simpson Ridge	90
Dutton Creek	140
Total Wyoming	47,350
MONTANA	
Cat Creek	1,150
Lake Basin	50
Kevin-Sunburst	4,470
Pondera	1,940
Border	500
Dry Creek	680
Total Montana	8,790
COLORADO	
Florence	498
Moffat	1,040
Fort Collins	1,165
Iles Dome	1,010
Rangley	50
Tow Creek	410
Boulder	20
Total Colorado	4,193
NEW MEXICO	
Rattlesnake	1,100
Hogback	440
Table Mesa	75
Artesia	634
Cap Rock	364
Getty	92
Hobbs	31,717
Jal	1,307
Lea	3,562
Eunice	2,245
Texas Pacific area	250
Total New Mexico	41,786
Total Rocky Mountain	102,119
Total previous week	100,024
Difference	2,095

A.P.I. TO CONSIDER STRIPPER WELL PROBLEM

(Continued from Page 21)

owners, subsidiaries of Standard of Indiana have arranged to make their own physical connections with leases adjacent to their lines. As result Stanolind companies will soon be taking 12,238 bbls. daily from wells in Oklahoma and Kansas cut off by Prairie in December and on January 1, further connections being made wherever practicable.

"Similar action by other purchasers will provide market for 15,000 bbls. daily from stripper wells. Remaining 14,500 bbls. too scattered distant from purchasing companies' lines to be marketed except through Prairie gathering lines. The purchasing companies are unwilling to meet Prairie's demand for full charges on the use of Prairie gathering and purchasing facilities as doing same would mean paying at least 30 cents a barrel premium for the oil which can be gathered elsewhere without any additional cost.

"Kansas has apparently not understood that the offer by committee of purchasers was that if Prairie would run the remaining 14,500 bbls. from stripper wells the purchasing companies would buy an equivalent amount from Prairie's own leases at wells near their lines. This exchange of oil would give Prairie a new outlet equivalent to the amount Prairie would continue taking from stripper wells and obviate the necessity of increasing storage. This was considered an eminently fair proposition.

"While purchasers have done much for distressed producers in providing outlets for all but 14,500 bbls. of the oil from independent wells cut off by the Prairie, it is difficult to do more unless Prairie can co-operate.

"Standard of Indiana has been doing everything within reason to aid producers despite the fact it is losing market for 30,000 bbls. daily formerly carried through Stanolind lines to Sinclair refinery at East Chicago and so needs less oil instead of more."

BIG COMPANY IS FORMED FOR REFINING INDUSTRY

The Lummus Co., a new engineering and contracting firm having authorized capital stock of $10,000,000, has been organized to take over the business of the Walter E. Lummus Co. of Boston, Mass. The Superheater Co. and the Babcock & Wilcox Co. hold substantial blocks of stock in the new firm.

The Lummus Co. will engage in the design and manufacture of distillation and refining equipment for the alcohol, chemical and petroleum industries, thus following the lines of activity pursued by the Walter E. Lummus Co., but operating on a larger scale.

The facilities and experience of the Superheater Co. and the Babcock & Wilcox Co. combined with those of the Lummus organization will, it is claimed by Walter E. Lummus, president of the new company, provide a well rounded and scientific organization able to cope with many problems in the industries served.

The Walter E. Lummus Co. of Boston is an organization known in the distillation field for 30 years, having originated distillation processes and equipment of some note. The Superheater Co. has extensive manufacturing plants at East Chicago and Sherbrooke, Quebec, and has built heat transfer equipment for the refining field, particularly in the form of tubular heaters. The Babcock & Wilcox Co. is an old American organization, incorporated in 1881, and manufacture water tube steam boilers for stationary and marine service. The company also manufactures stokers, economizers, oil burners and other power plant auxiliaries. Babcock & Wilcox works are located at Bayonne, N. J.; Barberton, Ohio; East Liverpool, Ohio; and Augusta, Ga. A subsidiary company operates a tube mill at Beaver Falls, Pa.

Officers and directors of the new Lummus Co. are: President, Walter E. Lummus; vice president, Raymond R. Collins; secretary, Raymond R. Collins; and treasurer, Walter E. Lummus. Directors: Walter E. Lummus, George L. Bourne, F. J. Faulks, Raymond R. Collins, F. A. Schaff, C. W. Middleton, and A. G. Pratt.

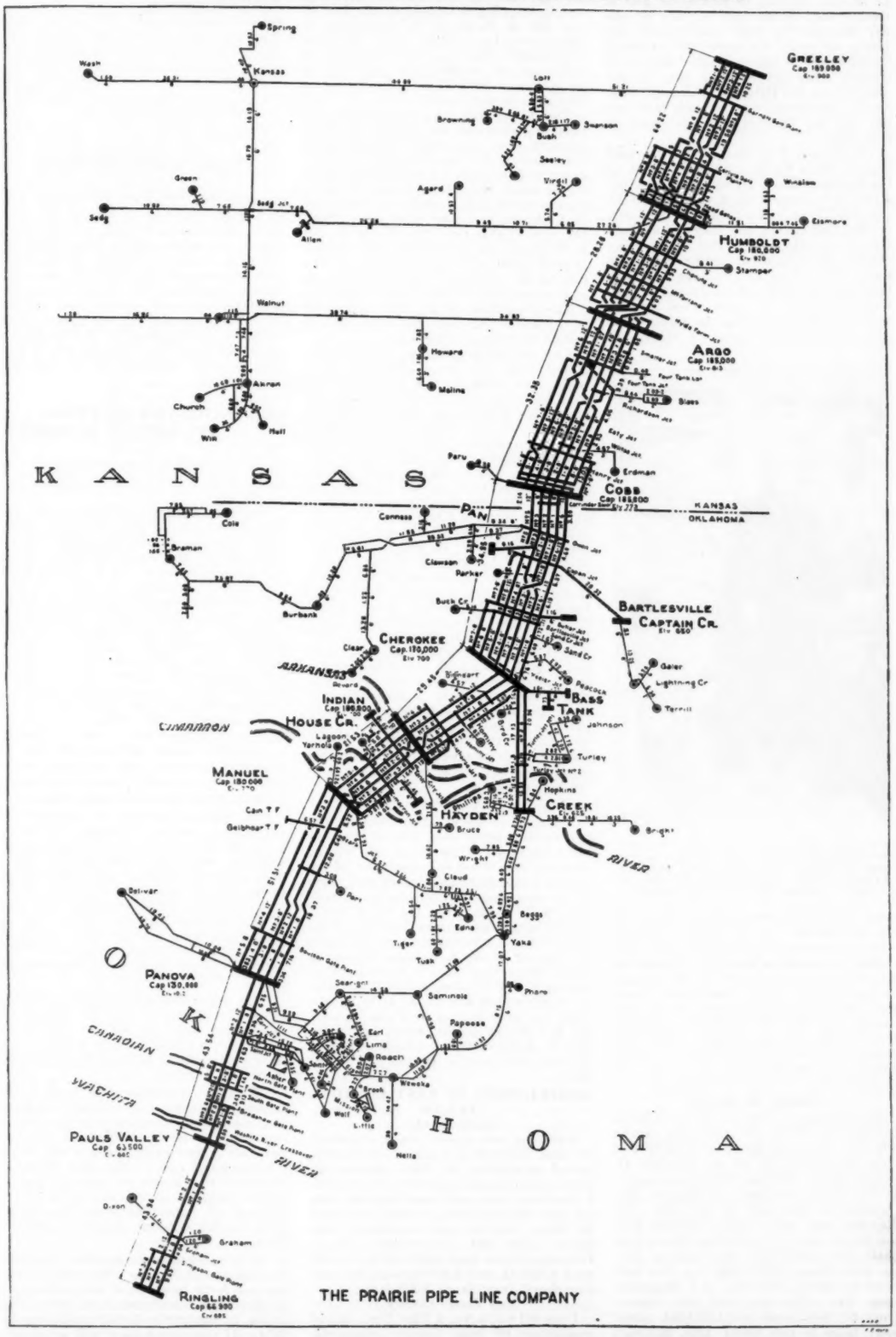
J. H. McDERMOTT DIES

BLUEFIELD, W. Va., Jan. 3.—Joseph Henry McDermott, president of the oil company bearing his name and of the Moore Texas Oil Co., died recently at his home here, aged 59. He was born in Meadville, Pa., and was long active in the Pennsylvania fields.

PLANS CO-OPERATIVE COMPANY

CHICAGO, Jan. 3.—A movement has been launched at Plattsville, Wis., which is intended to unite in one large oil company a number of the leading co-operative oil companies in the State. The plan has been formed by the Plattsville Consumers Co-operative Oil Co., F. A. Jentz, president, of that city. He believes that a statewide organization of companies of identical or similar purposes can be formed which will be for the general good of all interested. The plan would include buying for the entire list of companies by a central purchasing organization resulting it is claimed, in considerable savings in costs.

PRAIRIE'S PIPE LINE SYSTEM IN "STRIPPER WELL" AREA



—Map copyright by The Oil and Gas Journal, Tulsa.

Map of part of Prairie Pipe Line Co.'s system which covers section of northeastern Oklahoma and southeastern Kansas where are located the stripper wells without a market outlet since the Prairie Oil & Gas Co. withdrew as a purchaser of crude oil.

EAST CENTRAL TEXAS

(Continued from Page 52)

ducer in an exceptionally strategic location in regard to transportation facilities, although nothing has yet been announced as to plans for building a short line to the railroad and a loading rack from which to ship out crude.

Possible Outlets

The Humble Pipe Line Co. has a 10-inch welded line approximately 11 miles north of the Bateman discovery, running from the Van Field, Van Zandt County, to Morgan Station in Louisiana, and is moving only 10,000 bbls. of Van oil per day through the line, consequently has plenty of room for more East Central Texas crude if the company desires to connect with any area as near to the main line as the Bateman or Joiner Pools. Such a connection may be made later but has not yet been reported probable at this time.

The Joiner Pool, the first discovered pool in Rusk County, 10 miles south of the Bateman discovery, now has two short 4-inch lines connecting it with one 10-car and one 17-car loading rack on the I.&G. N. Railroad branch line which runs from Overton to Henderson, and oil is being shipped out from these loading racks. The Panola Pipe Line Co. was the first line built into the pool and the Inland Waterways Pipe Line Co. constructed the second short 4-inch line into the Joiner Pool, with the special purpose of taking oil

Mrs. Lou Della Crim, fee owner, and Ed. W. Bateman, owner and producer of the new Woodbine discovery well on Mrs. Crim's 628-acre farm in the Elbridge G. Sevier Survey, northern Rusk County.

from the Frank Foster, Deep Dock Oil Co. and others' No. 1 Ashby, the mile western extension well of the pool. Associates interested in this well formed the latter pipe line company for the purpose of constructing such a line to serve their well and potential producing acreage surrounding it. The H. L. Hunt Incorporation, which has production in the pool formed the Panola Pipe Line Co. which constructed the first line into the pool and a loading rack on the railroad.

Spudded in October

The Bateman producer was spudded in October 28, 1930, on a location staked 400 feet from the north and 3,088 feet from the east lines of the Elbridge G. Sevier Survey, Abstract 697, approximately 3½ miles southwest of Kilgore. The elevation of the well is 403 feet. The Navarro was logged from 1,830-68 feet, the Taylor marl at 2,350 feet, Pecan Gap chalk from 2,608-3,014 feet and the Austin chalk from 3,480-3,552 feet. The well came in making 308 bbls. in a 20-minute open flow after the mud was cleaned from the hole, and two 1,000-bbl. tanks were filled in two hours' time, the well then being shut in because of lack of storage.

William E. Cain was in charge of drilling operations of the well, and the following men composed the crew who drilled it in: Elmer W. Hayes, driller; O. F. Smith, E. A. Turner, Grady Gill and Ernest Kelly.

Joiner Pool

The Inland Waterways Pipe Line Co., of which W. A. Moncrief of Fort Worth is president, J. E. Farrell vice president and F. Kirk Johnson treasurer, has completed its 4-inch pipe line from the Foster-Deep Rock Oil Co.'s No. 1 Ashby in the Joiner Pool, Rusk County, to a 15-car loading rack on the I.&G.N. Railroad and is shipping out crude to the Louisiana Oil & Refining Co.'s refinery at Shreveport, La., calling for a minimum of 100,000 bbls. for January, and a maximum of 150,000 bbls., and having an option on 200,000 bbls. for February. The price is not known.

The Ashby well was given a test this week and produced 407 bbls. in one hour January 3 on open flow, making 2,615 bbls. during 21 hours ending 7 a. m., January 5, through a 1-inch choke, showing up much better than when completed. On December 13 it flowed only 1,660 bbls. in 13 hours, and was rated as a 3,000-bbl. well at that time. The Louisiana Oil & Refining Co.'s contract will require around 3,100 bbls. per day, and at the rate of its new potential it would seem such an amount could be easily produced.

The Deep Rock Oil Co. has an interest in the 4-inch line laid and owned by the Inland Waterways Pipe Line Co.

Two completions were registered in the Joiner Pool this week, although these wells have been semicompleted for the past two weeks. These are: Anderson and others' No. 1 Bradford, east of the Joiner discovery well, and Hunt's No. 1 Bradford, south of the discovery. The former was completed for an initial production of 60 bbls. flowing by heads at a total depth of 3,592 feet, and the latter for an initial of 50 bbls. flowing and swabbing at a total depth of 3,650 feet.

Moncrief and Farrell and others' No. 1 Lathrop, in the W. M. Robinson Survey, northwest of Longview in Gregg County, is drilling at 3,125 feet, and will be closely watched to see where it will pick up the Austin chalk, and how it is to correlate with the Bateman discovery about 12 miles due south. The Bateman well topped this key formation at 3,475 feet, and as both wells have approximately the same elevation, 300 more feet of drilling should tap this chalk if the wells run about the same. The former well found the base of the Pecan Gap chalk at 2,889 feet, making the well run 120 feet higher than the Bateman well according to this correlation, but the second chalk will be the better marker.

Van Pool

Activities in the Van Pool are now limited to 15 drilling wells, one of these being exceptionally interesting due to the fact that it is 2,100 feet southwest of the nearest producer and will mean that much of an extension if it proves productive. This well is the Pure Oil Co.'s No. 1 J. M. Martin and is located 200 feet from the north and 225 feet west of the northeast corner of the J. Schmitz Survey in the J. Stephenson Survey. It is standing cemented at 2,776 feet, and will probably be tested within the week. It is located 3,200 feet southwest of the Pure Oil Co.'s No. 1 I. W. Thompson, which was a dry hole at 3,313 feet, and which marked a defining point on the western side of the field.

COMPLETIONS IN EAST CENTRAL TEXAS

Rusk County

Anderson and others' No. 1 Bradford, oil sand 3,529-36 feet and 3,570-76 feet, initial production 60 bbls. flowing by heads, total depth 3,592 feet. Hunt's No. 1 Bradford, shale and sand 3,540-46 feet, oil sand 3,546-49 feet, initial production 50 bbls., flowing and swabbing total depth 3,650 feet. Rosenfield's No. 1 Pinkston, Pecan Gap, 2,503-2,946 feet, oil sand 3,539-41 and 3,550-51 feet, dry and abandoned, total depth 3,602 feet.

Van Zandt County

Pure Oil Co.'s No. 2 Ella York, initial production 96 bbls. through eleven-sixteenths inch choke, total depth 2,937 feet. Same company's No. 3 O. L. and L. L. Swain, initial production 120 bbls. through eleven-sixteenths inch choke, total depth 2,951 feet.

Walker County

Texas-State Oil Co.'s No. 1 W. J. Fails, dry and abandoned, total depth 3,204 feet.

East Central Texas Production

Average daily production for the week ending January 3:

Boggy Creek	3,820
Cedar Creek	50
Currie	290
Hill County	25
Mexia	3,700
Minerva	420
Nigger Creek	180
Powell	4,950
Richland	110
Rusk County	300
Thrall	30
Van	27,500
Wortham	580
Total East Central Texas	40,955
Week ending December 27	40,735
Increase	220

TANK WAGON CHANGES

(Continued from Page 110)

at Des Moines, 2 cents, making the price 17.5; Milwaukee, 1 cent, posting 16.1; Huron, 1.8 cents, posting 19.3, and Kansas City, 2 cents, at 16.9. At St. Paul and Minneapolis, January 6, all companies, including the so-called cut-rate concerns, advanced the service station price 2.2 cents, making the regular price 18.2. At Detroit, January 3, tank wagon price was posted at 16.8 and service station at 17.8, increases of 3.5 and 5.3, respectively.

OIL INDUSTRY GETTING ITS HOUSE IN ORDER

(Continued from Page 23)

production, transportation, refining and marketing.

"So long as business is carried on under private control and individual initiative, complete stabilization cannot be accomplished. Reasonable stabilization is the proper objective and is necessary to the effective conduct of any industry. Whether it is possible to bring it about to an ideal degree without legislation is debatable. Legislation suggests the possibility of carrying co-operative movements to the point where concentration and consolidation might take the place of co-ordination which is more consistent with the customs and habit of mind of the American people. There is, however, not the slightest doubt that voluntary co-operation under the inexorable law of economic necessity will improve conditions in the industry immeasurably.

Unit Development Gaining Favor

"The general principle of unitized operations, to the end of bringing the crude oil to the surface at a rate commensurate with its utilization, is constantly being developed, and three of the largest fields in the United States now are, as a result of it, being produced at a small fraction of their possible output. If any one of these three fields had not been controlled in this way the whole structure of the industry would have been temporarily upset.

"The next constructive step is to secure some sort of control over the drilling of exploratory wells, so that the very great difficulties attendant upon making unit agreements after a field has been brought in can be avoided.

"With the development of large fields in South America and the threat of Russian competition, sentiment in the industry seems to be crystalizing in the belief that a protective tariff would have a constructive effect. The most effective argument that could be made against a tariff would be sincere and radical curtailment of importations by those who have available South American production.

"It is reasonable to presume that the intelligent and intense effort that is being put forth to stabilize the production of oil will be cumulative in its effect and result in materially better conditions in 1931. If this is not so it will be on account of the failure of the marketing management to approach its problem in as broad and constructive a way as has been already done by the producers.

"In my opinion, the year 1931 will be one of reorganization in the industry, and in the final outcome it will be in a position to render better service to the public, and if it does so on a narrow margin it will be on one which is more assured."

"Unitize and Integrate," says Moran

D. J. Moran, president of Continental Oil Co., sees more thorough integration and unitization shaping the destinies of the oil business along the lines where a firmer basis is in sight. The industry, he believes, has passed through a revolution rather than a depression—a revolution in which brains and science have vanquished luck and brawn.

"It is with trepidation that one discusses the immediate future of the oil industry. There is no question but that the patient is passing through a crisis. Like all forms of business, the units that have the resistance will recover and prosper while those that existed solely on opiates will be invalided.

"Public and private participation in purely speculative opportunities has ceased. The funds that poured into all forms of flimsy prospects are no longer available. This situation curbs, for the time at least, the abortive drilling of wells and building of refineries and sales facilities.

"From the published statements of companies and individuals, the investor will see the devastation caused by unsound competitive practices in every phase of the business. Experience has taught a lesson to management that should result in gradually improving conditions within the next six months.

"By review of the volumes of statistics that are available on the oil industry, and considering only the consumption of petroleum products, there has been no depression," says Mr. Moran. "The oil industry has really been in the state of revolution. Scientific methods of exploration and manufacturing as applied to geophysics, in the first instance, and cracking, vacuum vapor phase installations, in the second, are collectively the two factors that have lent themselves to the elimination of chance and speculation before their erosive effects have been realized by a majority of those engaged in the business. The industry has been manned to a great extent by people who have a prejudice against these intrusive agents of efficiency and who would not permit themselves to be sold on the idea that anything could intrude upon methods and conditions that have prevailed since the drilling of the Drake well in 1859. Modernity in exploration and exploitation entered into competition with luck and brawn, and now can definitely claim a victory. The state of revolution is, consequently, at an end.

Reorganization in Program

"Some agency beyond the control of those who have the fate of the industry in hand at the present time is actually bringing about reorganization. It will be only a very short time when individuals now connected will relinquish their hold in favor of the inevitable, which is a closer union of effort and ideals for the proper conduct of a substantial industry that demands only a fair margin of profit. Without regard to the standing of a corporation in the business of petroleum most investors have looked upon their oil securities as speculative. They are oblivious of the fact that the by-products of petroleum have a definite position in our economic life second only to agriculture. The tide is definitely turning to a point where such a security-owning public will realize that it has made a sound investment in an industry based upon fundamental requirements, and in something that has contributed more to the advancements of the past century than any other commodity. In this we refer to the increased speeds of all forms of mechanism through better lubrication, the automobile, the airplane, and innumerable other purposes and applications of oil as a fuel or a lubricant.

"More thorough unitization and integration must figure in a composite control of our reserves. The twelve billion dollars invested in permanent facilities for the production, manufacture and distribution of petroleum products must be

protected by a large amount of known reserves for the ever-increasing demand. It was but a few years ago when the manufacturer and marketer of petroleum by-products were only a few days ahead of their consuming demand with raw and refined stocks. Now that we can insure the large permanent investment with the proper backlog of raw material, there should be no fear of so-called 'overproduction,' providing the control of underground reserves is such that it will not permit dissipation.

"Despite the selfish activities of companies and individuals, there are forces at work that will bring about a greater respect for this very important industry. A reorganization is taking place, which, when complete will furnish tools to administer the affairs of petroleum in accordance with the true law of economics and eventually create a parallel to the showings of several well-managed industries that have been forced to meet in their earlier development experiences similar to those now existing in the oil industry."

Irish Sees Better Prospects

W. M. Irish, president of Atlantic Refining Co., says:

"For the oil industry, 1931 in prospect looks better than 1930 in retrospect. The principal basis for our opinion is the meager reward which accompanied 1930 efforts of the industry. Recently, demand for products has declined greatly; product prices have shrunk to all-time 'lows'; profits have disappeared. It requires no great optimism to predict some ascent from the present unsatisfactory levels.

"During 1930 the oil industry has made gratifying progress with respect to the solution of some of its problems. It has extended considerably its unification activities, which constitute the beginning of rationalization. It has improved its statistical position to the extent of reducing stocks of crude oil and products by 14,000,000 barrels. Recently the industry has begun to appreciate the significance of the vast capital frozen in idle or nearly idle production facilities. Correction of this form of waste has been under way since June by the reduction of oil field development. During November, last, oil well completions were less numerous than for any month since early in 1924.

"Some old problems remain to be solved and new ones have arisen. Notable among the former is the continued threat to the stability of the industry by the largest potential shut-in production in its history. Among the new problems is the opposition which has been created recently to the transportation improvements now under way within the industry. Without doubt current pipe line extensions constitute technologic improvement of great importance. The mere fact that the development of such transportation may threaten the gross revenues of a sister industry seems to be an unsound basis for opposition such as the railroads appear to have organized. The legal and administrative handicaps which the railroads would impose upon the pipe lines are the handicaps to which the railroads long have objected. If their objections are valid the way to their enforcement would not be cleared by imposing the same kind of handicaps upon another industry."

Reeser Sums Situation

E. B. Reeser, president of the American Petroleum Institute and of the Barnsdall Corp., states:

"The only question concerning the 1931 outlook for the petroleum industry is whether or not conservation or proration programs in various states will succeed. We hear remarks occasionally that the proration movement cannot succeed because it has never been done before, or that the old law of supply and demand must prevail. It has also been suggested that the attempt to curtail production of wheat, cotton, rubber, sugar, etc., has failed and that the movement in the petroleum industry must therefore end in failure.

"It must be admitted that the production in the steel industry is not based on its 'potential' supply of raw material. Stocks of steel and iron products clearly indicate that production in that industry is based on demand. The production of wheat, cotton, rubber, sugar, etc., is an annual event and even though an entire crop is wasted, an ample supply can be created each succeeding year.

"Petroleum is a wasting resource and every barrel produced is that much less to be recovered from the total supply. It is true that at this time a tremendous potential supply is indicated. A period of oversupply is nothing new in the petroleum industry. They have occurred at intervals ever since the beginning of the industry. The present oversupply has been of longer duration than any other period, due to the fact that more than the usual number of large potential fields were discovered at frequent intervals. The question naturally arises as to whether these frequent discoveries cannot be continued, thus making the oversupply permanent.

Few Promising Areas

"In answer to this, it may be suggested that over the last six or eight years the best geological locations between the Mississippi River and the Rocky Mountains, and on the Pacific Coast, have been fairly well tested. Other fields will be found, but they will be more costly and more difficult to discover. At this time very few promising spots are in sight and with the decrease in drilling operations, it may be considered reasonable to expect that nothing of major importance will be developed during 1931.

"Proration is not an idea conceived by a small group of the larger companies. It has been suggested and urged by former President Coolidge and by President Hoover; and every report of the Federal Oil Conservation Board has strongly recommended conservation of this great natural resource. The movement to prorate production has grown like a rolling snowball during the past few years and today every fresh or new producing area in the United States is operated under the direction of a proration committee. This work is further augmented by state proration committees and by a national advisory committee. The programs have been developed more intelligently from time to time.

"State conservation authorities—especially in Oklahoma, Texas and California—are taking an important part in the enforcement of proration orders. In Oklahoma the law has been tested and declared by the Supreme Court of the State to be constitutional. It is believed that the Texas Railroad Commission is fully within its constitutional rights in its attempt to enforce its orders.

Production Will Be Held Down

"Committees now at work on the schedules for the first quarter of 1931 are receiving greater support than ever before. There is no indication at this time of a departure from the plans. We believe the production in the United States in 1931 will be within the limits suggested by the Economics Committee of the Federal Oil Conservation Board in October.

"The refining division, for the first time in its history, has adopted as its program the report of the Economics Committee and it now appears certain that the stocks of gasoline in the United States on April 1, 1931, will be approximately 40,000,000 barrels, as compared with 56,000,000 barrels on the same date in 1930.

"With the producing and refining divisions definitely committed to the policy of producing only such volume as will meet the reasonable demands, and, in addition, permit of an orderly reduction in stocks, it can be reasonably expected that the petroleum industry will have satisfactory financial results in 1931."

Effects of Proration

W. S. Farish, president of the Humble Oil & Refining Co., says:

"It is so obvious as hardly to require stating, that the year 1930 has been unprofitable for the oil industry, as it has for almost all other industries; and this is true in the case of oil in spite of the fact that it has enjoyed an increase of approximately 5 per cent over the year in the consumption of its major product—gasoline. The consumption of all oil products, to be sure, shows no increase over the year 1929, but it did hold his own, whereas the average industry had to contend with shrinking demand for its products last year, as compared with 1929.

"It may well be asked why an established, basic industry like oil, nationwide in its scope, has been unable to carry on at a reasonable profit during a year when its raw material was abundant and relatively cheap, its manufacturing costs reasonably low, and its principal-product demand larger than the banner demand of 1929.

"The main reason the oil industry made no better showing in 1930 is that refiners overproduced gasoline last winter and spring to the extent that a depressingly large surplus of finished gasoline has been on hand and ready for market throughout the entire year. The influence of these large gasoline stocks to depress prices has been augmented in its effect on the year's business by the uneconomic effort among distributors of gasoline for increased volume which has resulted in the continued increase in the multiplication of distributing facilities beyond all reason and in correspondingly higher marketing cost.

"The outstanding accomplishment of the oil industry in 1930 has been the success of producers, in co-operation with federal and state conservation agencies, in preventing production of crude oil in excess of demand. Producers of crude oil by virtue of great effort on their own part and the indispensable aid of state and federal conservation authorities did succeed, under the orders of the state officials, in holding crude production below crude consumption for the year 1930, a record for which producers merit unstinted praise. The methods of proration, however, and the other machinery of control which accomplished this curtailment have been subject to challenge and contest from first to last, and today, particularly at Oklahoma City, the authority of conservation officials is still being seriously challenged. This effort on the part of a few to break up proration, which has been the principal implement of crude production control, has had and still has enough chance of success to make it a very disturbing influence. Its effect has been to nullify much of what control of production would otherwise have accomplished. The hope of those few interests who, misguidedly or from selfish motives, oppose proration and the orderly production of crude that they may yet succeed in defeating it, together with the fear on the part of a far larger number of manufacturers that proration may fail and let loose upon the industry the flood of crude oil which is potentially available, have operated as an extremely depressing influence on both crude oil prices and refined product prices. Largely due to the effect of this threat of a breakdown in proration the wholesale value of all refined products is now less than the cost of raw material plus the cost of manufacture.

Improving Rapidly

"Currently, refiners are limiting crude runs to a volume which, if the effort continues, will permit the industry to go into the consuming season next spring without dangerously increased stocks of gasoline. Crude producers, likewise, continue to hold production to market demand in spite of the efforts of a few to break down proration. As a result of these two policies the statistical position of the whole industry is improving rapidly. If proration continues to hold and if the threat of failure of proration can be promptly and definitely eliminated, then, in time, improvement and stabilization of crude oil and wholesale refinery product values must inevitably follow.

The efforts of producers and conservation agencies to prevent overproduction of crude oil during the year 1930 have been astoundingly effective. In spite of proven and developed crude oil reserves in the ground so large as to make it easily possible to produce far more oil than has been produced in any previous year, the average daily domestic production for the week ending December 27 was 2,126,750 barrels. This production is smaller than that for any weekly period since July 31, 1926; it is 500,000 bbls. daily smaller than the production for the corresponding week last year and 850,000 bbls. less than the daily production for the peak week during 1929. Our present rate of crude production, therefore, is but 82 per cent of the rate for the corresponding period last year, and only 71 per cent of the peak production for 1929. The record for the whole year will show about 90 per cent of the figure for 1929. Without this control of production on the part of producers, millions of barrels of oil would have been added to already excessive aboveground storage in 1930.

"This remarkable accomplishment resulted almost entirely from the policy of proration. Proration may be defined as the ratable distribution or sharing among producers, large and small, of the market demand or outlet, during times of potential production, in excess of such market demand. Production of crude oil in excess of demand results in waste; so great is the waste occasioned by production in excess of demand that greatest recent advancement in oil conservation effort has resulted from the matching of supply with demand—matching crude production with products consumption. Proration accomplishes this balance, but it does even more; it serves the interest of the small producers by forcing the large producer, who by fortunate circumstance may be in position to find a market for his entire production, to share that outlet with his less fortunate fellow producer.

Has Protected Producer

"When proration becomes absolutely and entirely effective, as it must eventually do, it will promote the interest of the industry and public at large entirely beyond the immediate field of the producer. Given effective control of the output of crude oil, which may be had through proration, even the excessively high costs of distribution and numerous bad practices in the marketing of gasoline, which we all recognize as one of the important factors in causing our present difficulties, may be minimized or eliminated. In controlling production the industry marches forward hand in hand with public interest and the conservation laws.

"Proration has secured to the producer for his oil an average price well above that which he would otherwise have received. But, contrary to an apparently rather widespread opinion, proration does not freeze crude oil prices at any particular level, nor is it designed for the purpose of controlling crude oil prices. It is simply a co-operative effort on the part of the producer to prevent waste of oil and gas, to lower production costs, to limit the production in any given field to the market demand therefor, and to establish and maintain ratable withdrawals of crude oil from the several properties therein.

"Proration is practical conservation. It is the logical and inevitable consequence of the recent profound success of our oil-finding effort. If the oil industry is to succeed in setting up and maintaining adequate reserves of oil in the ground, ready to be produced when the nation requires them, as is recommended in President Coolidge's now famous letter with which he established the Oil Conservation Board, then it must continue to have proration. There is no practical substitute for this method of control of production, and production must be controlled as long as we have reserves in the ground capable of yielding oil at a rate in excess of current demand. Proration is indispensable to the maintenance of proven and developed oil reserves in the ground, which, in turn, are essential to the nation's security and well being.

"Proration must carry on. It has the endorsement of the Federal Oil Conservation Board and the various state conservation authorities. So far as our courts have spoken on the subject, they, too, have endorsed its principle in recognizing the common interest that owners of land in an oil field may have and the necessity of protecting one owner from encroaching on the rights and property of his neighbor.

"If proration should fail today enormous volumes of crude oil would have to begin at once to flow into storage tanks. Crude oil prices are already low, but they would certainly break further downward

because of the necessarily increased expense of carrying into storage the excess oil purchased. Let those who deplore proration consider who is to bear this cost of storage. What banker is going to lend money to his oil company client for the purpose of building tanks and storing crude oil today? What price will any purchaser be willing to pay for oil to be bought and placed in storage today?

Benefits to be Gained

"On the other hand, if proration continues to be effective the value of crude oil, the raw product, is largely in the hands of the producer, collectively. If the producer limits his production to the point where all crude oil goes to market at a fair market price, he will surely receive that price. If, however, any considerable quantity of crude oil is produced and marketed at a price lower than the established posted market price for that crude, the sale of such crude and the products therefrom will certainly and promptly bring down the price level of all crude to that of the crude thus marketed. There is no escape for the producer anywhere from the consequence of selling his product below the established market price.

"I believe that the long and desperate effort of the petroleum industry to establish ratable and equitable production of crude oil to the end that the supply shall not exceed the demand, currently, is all but an accomplished fact. I hope the fruits of the success of this effort may begin to be gathered by the industry during the year 1931. I know that we must carry our co-operative effort to final success, with the result that we will produce our oil at less cost; we will receive for it and for our products a fair price based on a balance between supply and demand; and we will materially lessen the waste of oil and gas, thereby contributing to the conservation of this greatest natural resource of the United States, an accomplishment which must serve alike the industry, the public, and the nation."

PANHANDLE FIELDS

(Continued from Page 51)

covery of the shallow Riggs Pool in the T.E.&L. Survey.

Runs to local refineries in the Wichita Falls district were 9,585 bbls. less than the previous week's run. The former week the daily runs totaled 28,594 bbls. and this week's daily average was 19,009 bbls. Of this latter amount 3,493 bbls. were sold at market price, the remainder going under the posted price. Of the 15,516 bbls. sold under the posted price, 13,306 bbls. were sold for 38 cents below the market price, 1,404 bbls. were sold at 29 cents below the market price and 806 bbls. brought 18 cents per barrel below the market price.

The Pure Oil Pipe Line Co. is reported to be laying a 4-inch line from the Olney station in north Young County to the Prairie Pipe Line Co.'s station at Orth in the same part of the county, and will take over the latter's gathering system in the Orth and New Castle areas. The former company has also taken over approximately 1½ miles of 4-inch line of the Simms Oil Co. in north Young County.

Ranger Proration

The Overall Pool, Coleman County, was prorated December 25 to 4 bbls. per well for wells above 2,000 feet and 8 bbls. per well below 2,000 feet, which is the general plan for prorating the Ranger or West Central Texas district. There are 20 wells in the pool, totaling 160 bbls. per day under the new proration rules.

The Lloyd or Stewardson Pool in southern Coleman County is prorated the same, being allowed only 4 bbls. per well due to the shallower pay horizon found in this pool than in the Overall Pool

Panhandle Oil & Refining Co.'s No. 1 Cox in the eastern part of Young County, which came in for an initial production of 10,900,000 feet of gas and about 120 bbls. per day, has been deepened 5 feet from 2,330-41 feet and increased the production to 15,400,000 feet of gas and 10 bbls. of oil the first seven hours. This is a wildcat on the M. Cox farm in the Indianola Railway Survey. Oil production in the well seemed to have fallen off, but the gas gained in volume, and the oil production may gain with the gas.

FEWER COMPLETIONS BUT INCREASE IN INITIAL OUTPUT IN DECEMBER

The holidays, added to the curtailment in production in the most important of the oil-producing states, resulted in a decline of 106 in the number of producing wells in the fields east of California in December as compared with the record for November. In initial production a gain of 12,636 bbls. is shown. There were 29 fewer dry holes and 44 more gas wells. Field operations declined materially and at the close of the year there were 563 rigs up and 2,743 drilling wells, a total of 3,306 operations, as compared with 3,511 operations at the close of November. Following is a summary for all the states east of California:

SUMMARY OF ALL FIELDS
WELLS COMPLETED

	Comp.	Prod.	Dry	Gas
Eastern	187	918	49	69
Central Ohio	71	677	29	24
Lima	11	0	1	10
Indiana	12	120	3	5
Michigan	14	290	6	5
Kentucky	98	10,149	26	34
Illinois	11	15	7	1
Missouri	1	0	1	0
Kansas	70	21,686	28	17
Oklahoma	199	441,919	72	32
North Central Texas	162	4,876	97	12
East Central Texas	21	108,070	5	0
East Texas	5	.....	1	4
West Texas	33	4,237	12	1
Texas Panhandle	32	2,827	7	17
Gulf Coast	68	18,175	32	9
Southwest Texas	79	11,008	37	7
North Louisiana	46	2,571	19	15
Arkansas	12	1,465	4	3
Mississippi	9	100	4	4
Montana	5	56	1	2
Wyoming	14	3,037	6	1
Colorado	5	149	1	2
New Mexico	22	163,074	2	1
Utah	2	.....	2	0
Total Dec.	1,189	795,419	452	275
Total Nov.	1,295	782,783	481	281
Difference	106	12,636	29	44

RIGS AND WELLS DRILLING

	Rigs	Drlg.	Ttl.
Eastern	41	198	239
Central Ohio	31	132	163
Lima	8	24	32
Indiana	4	51	55
Michigan	66	102	168
Kentucky	...	180	180
Tennessee	...	18	18
Illinois	2	20	22
Missouri	...	3	3
Kansas	32	154	186
Oklahoma	93	467	560
North Central Texas	48	253	301
East Central Texas	7	22	29
East Texas	5	21	26
West Texas	30	163	193
Texas Panhandle	31	88	119
Gulf Coast	23	157	180
Southwest Texas	19	194	213
North Louisiana	32	77	109
Arkansas	6	47	53
Mississippi	16	26	42
Alabama	2	3	5
Montana	24	77	101
Wyoming	16	101	117
Colorado	13	79	92
New Mexico	13	66	79
Utah	1	20	21
Total Dec.	563	2,743	3,306
Total Nov.	602	2,909	3,511
Difference	39	166	205

NORTH TEXAS PRODUCTION
Week Ending January 3

Panhandle District—	Bbls.
Carson County	3,850
Hutchinson County	7,790
Gray County	41,965
Moore County	110
Potter County	....
Wheeler County	325
Total production this week	54,040
Total production last week	56,475
Decrease	2,435
Wichita Falls District—	
Archer County	11,925
Baylor County	915
Clay County	620
Cooke County	2,071
Foard County	80
Jack County	1,450
Haskell County	35
Montague County	4,200
Throckmorton County	490
Wilbarger County	14,081
Wichita County	20,450
Young County	10,781
Total production this week	67,098
Total production last week	68,401
Decrease	1,303
Ranger District—	
Brown County	4,640
Callahan County	2,725
Coleman County	2,315
Comanche County	1,004
Palo Pinto County	375
Eastland County	3,455
Shackelford County	4,866
Stephens County	4,725
Total production this week	24,105
Total production last week	24,615
Decrease	510

COMPLETIONS FOR NORTH CENTRAL TEXAS

Archer County

W. C. Young's No. 2 Taylor, oil sand 1,740½-47 feet, initial production 35 bbls. oil and 20 bbls. salt water, total depth 1,747 feet. Carter and Wright's No. 2 Wilson estate, oil sand 1,078-81 feet, initial production 1 bbl., temporarily abandoned, total depth 1,081 feet. Continental Oil Co.'s No. 1 Falls, top pay 1,079-94 feet, shot 80 quarts 1,077-94 feet, initial production 30 bbls., total depth 1,095 feet. Maer and Martin's No. 1 Andrews, dry and abandoned, total depth 955 feet. Pandem Oil Corp.'s No. 1 Young-Murrell, abandoned, location.

Throckmorton County

States Oil Corp.'s No. 1 Davidson, dry and abandoned, total depth 1,324 feet. Knox and others' No. 1 Reynolds Land & Cattle Co., initial production 250,000 feet of gas from 517-19 feet, with 140 pounds rock pressure, total depth 519 feet. Woodley Petroleum Co.'s No. 1 Pogue, dry and abandoned, total depth 1,331 feet.

Wilbarger County

The Texas Company's No. 390 Waggoner, oil sand 527-33 feet, initial production 7 bbls., total depth 537 feet.

Young County

Belknap Coal Co.'s No. 6 fee, dry and abandoned, total depth 706 feet. Brazelton Brothers' No. 1 Grubbs, dry and abandoned, total depth 455 feet. F. E. Butler's No. 3 Finch and others, oil sand 642-51 feet, total depth 703 feet, plugged back to 665 feet, initial production 30 bbls. P. K. Deat's No. 1 Furr, dry and abandoned, total depth 802 feet. Jacob Oil & Gas Co.'s No. 2 Finch and others, oil sand 651-62 feet, shot 30 quarts, initial production 48 bbls., total depth 662 feet. Jacob Oil & Gas Co.'s No. 3 Finch and others, oil sand 641-52 feet, total depth 690 feet, plugged back to 652 feet, shot 30 quarts, initial production 20 bbls. W. H. Kerbow's No. 1 McCord, dry and abandoned, total depth 662 feet. King Royalty Co. and Bullington's No. 9 Graham, oil sand 685-710 feet, initial production 864 bbls., total depth 710 feet.

Petroleum Producers Co.'s No. 9 Graham, oil sand 697-711 feet, initial production 250 bbls., total depth 711 feet. Petroleum Producers Co.'s No. 10 Graham, oil sand 685 feet, initial production 400 bbls., total depth 705 feet. W. M. Shriver's No. 1 Stewart, dry and abandoned, total depth 852 feet. Smith-Shamblin and others' No. 1 Belknap, dry and abandoned, total depth 704 feet. W. R. Stafford and others' No. 1 Dossett and Watson, dry and abandoned, total depth 535 feet. Stastny and others' No. 1 Eichelberger, dry and abandoned, total depth 891 feet. V. Swanson's No. 1 Routin, dry and abandoned, total depth 890 feet. Ungren and Frasier's No. 1 Anderson, dry and abandoned, total depth 705 feet. Wellis and others' No. 2 Kirkland, oil sand 696-713 feet, initial production 715 bbls., total depth 713 feet. Hamilton and others' No. 1 Johnson, dry and abandoned, total depth 725 feet. Henderson Oil Co.'s No. 1 McNeil, temporarily abandoned, total depth 3,132 feet. Towne Oil Corp.'s No. 1 Rhodes, abandoned location.

PANHANDLE COMPLETIONS

Carson County

Plains Holding Co.'s No. 3 McConnell, initial production 47,000,000 feet of gas from 2,490-2,700 feet, total depth 2,700 feet.

Gray County

The Texas Company's No. 8 Williams, top pay 2,640-65 feet, initial production 150 bbls. oil and 2,000,000 feet gas, total depth 2,665 ft.

Hutchinson County

Holmes and others' No. 3 Moore, top pay 3,022-90 feet, shot 100 quarts 3,025-90 feet, initial production 150 bbls., total depth 3,100 feet. Texas Interstate Pipe Line Co.'s No. 1 Lee Bivins, initial production 13,500,000 feet of gas from 2,237-2,625 feet, total depth 2,625 feet.

Moore County

North American Oil & Gas Co.'s No. 1 Lee Bivins, initial production 34,000,000 feet of gas from 2,280-2,775 feet, total depth 2,803 feet.

COMPLETIONS IN RANGER DISTRICT

Coleman County

Hoffer and others' No. 1-A Bragg, dry and abandoned, total depth 3,590 feet. Ewno Oil Corp.'s No. 1 Stearns, dry and abandoned, total depth 1,108 feet. Forster Brothers' No. 1 Sharp, oil sand 1,146-56 feet, initial production 5 bbls. oil, total depth 1,157 feet. Joines and others' No. 2 Turner, dry and abandoned, total depth 2,030 feet. Permian Oil Co. and others' No. 1 Overall, dry and abandoned, total depth 2,568 feet.

Comanche County

Carvette Oil Corp.'s No. 5 Poteet, abandoned location.

Eastland County

Mook-Texas Oil Co.'s No. 1 Henderson, gas sand 842-65 feet, initial production 4,090,000 feet of gas, total depth 865 feet. Lobaugh and others' No. 1 Kimbrough, dry and abandoned, total depth 1,582 feet. Southern Oil & Production Co. and others' No. 1 Martin, gas sand 3,465-68½ feet, initial production 2,000,000 feet of gas, total depth 3,468½ feet.

Hood County

Standard Oil Co. of Texas' No. 1 Cogdell, gas sand 2,490-2,510 feet, initial production 29,000 feet of gas, total depth 2,510 feet.

Palo Pinto County

Texas Pacific Coal & Oil Co.'s No. 1 Robinson, sand 4,042-45 feet, initial production 500,000 feet of gas, total depth 4,295 feet. Wickens and others' No. 1 Jones, sand 3,202-06 feet, initial production 2,180,000 feet of gas with 460 pounds rock pressure, total depth 3,206 feet.

Stephens County

Outlaw and others' No. 1 Langford, dry and abandoned, had gas sands 1,802-15 and 2,142-50 feet, both tested 860,000 feet of gas with 430 pounds rock pressure, total depth 2,205 feet, half full of water.

GASOLINE PRICES RESTORED

CHICAGO, Jan. 3.—Effective today, the Standard Oil Co. (Indiana) has restored the normal gasoline price both tank wagon and service station at all points in the territory where the normal price had been reduced. This puts the entire territory so far as the Standard Oil Co. is concerned back on a regular statewide normal price basis. Work has been going on quietly for several months looking to the resumption of regular normal prices.

Dark spot after dark spot on the oil map has been wiped clean until the number of cut price points has been greatly reduced. Under present conditions it is believed that the trade appreciates as they have not for many years the essential importance of maintaining a fair price which with no taxing of the public still leaves a fair margin of profit for all from the producer to the distributor. This is decidedly a step forward. It is to be hoped that all keep in line and do their best to maintain a scale of prices which will be reasonably profitable.

OPERATING SPANISH REFINERY

NEW YORK, Jan. 5.—Compania Espanola de Petroleos (Spanish Petroleum Monopoly) has placed its new refinery at Santa Cruz de Teneriffe in the Canary Islands in operation. The new plant, which was built by an American company, has capacity of 5,000 bbls. per day.

The Teneriffe plant is connected with tidewater by a 3-mile pipe line. The refinery is equipped with the most modern apparatus and present plans call for capacity operations.

GEOLOGICAL SOCIETY TO MEET IN TULSA

(Continued from Page 25)

has been in Tulsa since 1928 as a member of the Gypsy Oil Co. staff.

Mr. Clark, the retiring president, is a graduate of the University of Utah in the class of 1919 and was with the United States Geological Survey for a time and entered the petroleum geological field in 1919 when he did geological work in the oil fields of West Virginia. He came west and joined the staff of the Mid-Kansas Oil & Gas Co.

Frederic A. Bush
First Vice President

in 1923 and has been with that organization ever since.

Frederic A. Bush, first vice president for the year 1931, is chief geologist for the Sinclair Oil & Gas Co. and has been with that company since 1926. Upon graduating from Stanford University in 1925 he was field geologist for the At-

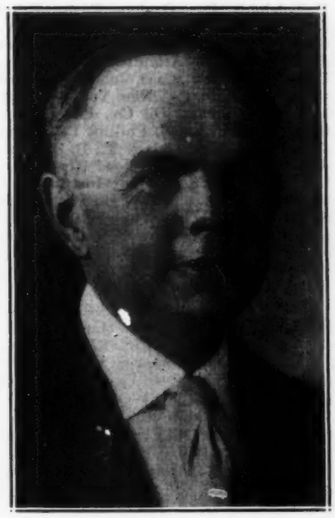
C. L. Severy
Second Vice President

lantic Oil Producing Co. in the Mid-Continent area for a year.

C. L. Severy, second vice president, is a graduate of Stanford University also, but in the class of 1908, and is now a consulting geologist with offices in Tulsa. Mr. Severy followed mining engineering for a time after leaving college and entered the service of the Carter Oil Co. in 1915 as chief geologist and was with them until 1917, since which time he has acted as consultant.

Ronald J. Cullen, secretary-treasurer of the society, is a graduate of the University of Oklahoma in 1922, and worked first for the Amerada Petroleum Corp.

Ronald J. Cullen
Secretary-Treasurer



L. E. Kennedy
Member of Council

Harry F. Wright
Member of Council

H. E. Rothrock
Member of Council

for four years and in 1927 went with the Twin State Oil Co. and is still in its geological department.

The council for 1931 is made up of Harry F. Wright, Iowa State, 1912, and a consulting geologist and petroleum engineer; L. E. Kennedy, University of Illinois, 1918, and now geologist for the Douglas Oil Co.; and H. E. Rothrock, Oberlin, 1917, and geologist for the Superior Oil Co. All council members are residents of Tulsa.

The technical session for this meeting consisted of a paper presented by Frank R. Clark on "Oil Pools" dealing with the accumulation of oil in reservoir rocks.

The various theories advanced by Mr. Clark were discussed and it was agreed by all that too little work has been done on this phase of petroleum geology since the broad principles of structure were first laid down by Dr. I. C. White many years ago.

NEW DENATURANT INTO MARKET

Standard Oil Co. of California, holder of the secret formula for alcotate, a nonpoisonous denaturant for industrial alcohol, has shipped three carloads of alcotate from its plant at Richmond, Calif., where the denaturant is derived as a by-product of the cracking process. The sale of 84,000,000 gallons of denatured alcohol in 1929 in the United States indicates a good market for this petroleum product.

PETROLEUM ASSOCIATION ARRANGES MEET PROGRAM

The program of the National Petroleum Association at its meeting in Cleveland, April 23 and 24, will be announced next week, according to O. P. Keeney, chairman of the program committee. Other members of the committee are: G. C. Davison, Tri-State Refining Co.; A. M. Maxwell, Standard Oil Co. of Ohio, and C. G. Sheffield, also of the Standard of Ohio. Fred G. Clark of Fred G. Clark Co. will have charge of the entertainment at the fellowship supper on the evening of April 23.

Annual meetings of the association are held in Atlantic City in September. Headquarters for the semiannual sessions will be at the Hotel Cleveland. Members are urged to make their hotel reservations early.

NEW REFINERY PLANNED

The Swaim Oil Co. of Blackwell, Okla., is considering the matter of building a refinery somewhere in western Kansas to be commenced early the coming spring. The exact location of this institution has not yet been determined except that it will be located as conveniently as possible to the largest amount of production in that part of the State. The Swaim Oil Co. is carrying on drilling operations in western Kansas at this time.

Court Gives Lawyers Time to Define Waste In Production of Oil

OKLAHOMA CITY, Okla., Jan. 3.—After Federal Judges John Cotteral and Robert L. Williams intimated they would uphold the state oil proration regulations, final decision was withheld for at least 20 days when attorneys refused to agree on what constituted physical waste of oil.

Judge Franklin E. Kennamer gave no indication of his attitude.

Shortly after, arguments were concluded in the injunction suits brought by five independent companies attacking the order. The three said they had reached a decision providing both sides agreed on what constituted physical waste.

Advised by attorneys such agreement was not reached, the court gave the protesting companies 10 days to examine the Corporation Commission's order to determine this factor and 10 days more for the proration proponents to re-examine the records.

Physical waste variously was interpreted as the degree of oil wasted by either open flow of wells or degree of wastage caused by shut down of wells.

The conservation law and proration were attacked as meaningless phrases unconstitutional and directly in violation of the interstate commerce act, in closing arguments today.

The protesting companies, who asked injunction action against the State Corporation Commission's enforcement of the curb were the Champlin Refining Co. of Enid, Marco Oil & Royalties Co., Century Petroleum Co., Oils, Inc., and the Capitol Producing & Refining Co.

Edgar de Mueles, Tulsa, Champlin attorney, charged proration was in violation of the interstate commerce act. He said 60 per cent of his client's production was sent to other states and that the curb restrained business in violation of the constitution.

Frank Burford, attorney for proration proponents, charged the argument was falacious because oil and gas underground does not come under the rules of interstate commerce.

The suit is the second federal court contest of the curb. The court previously upheld the constitutionality of the law under which the Corporation Commission's order was issued, as did the Oklahoma Supreme Court.

ACTIVE GAS OIL MARKET AT GULF COAST POINTS

HOUSTON, Tex., Jan. 6.—Considerable trading in gas oils which has followed the opening of the new year has broken the deadlock which has existed between buyers and sellers for some time and has marked the only important change in the Gulf Coast refinery market for the past week. A slightly increased movement of pale and red oils from some sources is also noted, otherwise the lull which has existed through the holiday season continues.

The gas oil trading was at a much lower figure than the nominal market which has prevailed, but served to place refiners in an excellent position at the new low level to benefit from any additional demand for zero test burner oils which is expected during the winter months. Little differentiation was made in gravities in the activity which developed with all zero test material moving at approximately the same figure. The majority of business was around 3⅛ cents, although some sales were made as low as 3 cents. The market Tuesday apparently was firm at 3⅛ cents to 3¼ cents. Fuel oil was 65 to 70 cents, and bunker oil at terminals, 90 cents.

Some new business in lubricating stocks was reported from a few sources, although an inactive tone prevailed. January is usually a good month for lubricating stocks, due to the efforts of buyers to drain stocks to an absolute minimum preceding the close of the year, thus necessitating a replenishing of these stocks during this month. Sellers also try to place themselves in a better position by reduction of their stocks during December.

Six Committees in Institute's 1931 Refining Division

Six committees have been appointed to carry on various activities of the American Petroleum Institute's Division of Refining in 1931. The committees, as named by R. C. Holmes, The Texas Company, vice president of the institute and chairman of the Division of Refining General Committee follow:

Committee on Testing Methods and Specifications: Chairman, K. G. Mackenzie, The Texas Company, New York; secretary, R. P. Anderson, American Petroleum Institute, New York; R. J. Baker, Wadhams Oil Co., Milwaukee, Wis.; F. R. Baxter, Vacuum Oil Co., Rochester, N. Y.; H. T. Bennett, Mid-Continent Petroleum Corp., Tulsa; J. T. B. Bowles, Crown Central Petroleum Corp., Baltimore, Md.; F. W. Breth, W. H. Daugherty & Son Refining Co., Petrolia, Pa.; H. W. Camp, Empire Oil & Refining Co., Tulsa; S. E. Campbell, MacMillan Petroleum Products Co., Long Beach, Calif.; A. Ludlow Clayden, Sun Oil Co., Philadelphia, Pa.; O. P. Cottrell, Associated Oil Co., San Francisco, Calif.; E. W. Dean, Standard Oil Development Co., New York; T. G. Delbridge, Atlantic Refining Co., Philadelphia, Pa.; B. C. Frichot, Deep Rock Oil Corp., Cushing, Okla.; I. K. Giles, Warner-Quinlan Co., Warners, Grasselli, N. J.; R. E. Haylett, Union Oil Co. of California, Los Angeles, Calif.; C. K. Hewes, Richfield Oil Co., Wilmington, Calif.

E. M. Keely, Crew Levick Co., Philadelphia, Pa.; O. P. Keeney, Keeney Oil Co., New York; A. R. Lange, Swan & Finch Co., Newark, N. J.; E. R. Lederer, Texas-Pacific Coal & Oil Co., Fort Worth, Tex.; Zeno Le Tellier, Lindsay-McMillan Co., Milwaukee, Wis.; R. E. Luton, Lincoln Oil & Refining Co., Robinson, Ill.; R. R. Matthews, Battenfeld Grease & Oil Co., Kansas City, Mo.; E. B. McConnell, Standard Oil Co. (Ohio), Cleveland, Ohio; Gordon McIntyre, Imperial Oil Refineries, Ltd., Sarnia, Ontario, Canada; A. E. Miller, Sinclair Refining Co., New York; Walter Miller, Continental Oil Co., Ponca City, Okla.; D. W. Monroe, British American Oil Co., Ltd., Toronto, Canada; G. G. Oberfell, Phillips Petroleum Co., Bartlesville, Okla.; R. C. Osterstrom, Pure Oil Co., Chicago.

L. W. Parsons, Tide Water Oil Co., Bayonne, N. J.; T. A. Peck, Shell Petroleum Corp., St. Louis, Mo.; H. B. Pullar, J. B. Berry's Sons Co., Chicago; J. B. Rather, Standard Oil Co. of New York, Brooklyn, N. Y.; F. C. Read, Standard Oil Co. (Louisiana), Baton Rouge, La.; H. J. Robertson, Pierce Petroleum Corp., Sand Springs, Okla.; W. T. Sieber, Waverly Oil Works Co., Pittsburgh, Pa.; Herschel G. Smith, Gulf Refining Co., Philadelphia, Pa.; J. B. Terry, Standard Oil Co. of California, Richmond, Calif.; G. H. van Senden, Shell Oil Co., San Francisco, Calif.; E. R. Wiles, Barnsdall Refining Co., Barnsdall, Okla.; R. E. Wilson, Standard Oil Co. (Indiana), Chicago; and W. S. Zehrung, Pennzoil Co., Oil City, Pa.

Committee on Disposal of Refinery Wastes: Chairman, A. S. Russell, Standard Oil Co. of California, El Segundo, Calif.; secretary, D. V. Stroop, American Petroleum Institute, New York; H. W. Camp, Empire Oil & Refining Co., Tulsa, Okla.; John Carlstrom, The Texas Company, Port Arthur, Tex.; W. B. Hart, Atlantic Refining Co., Philadelphia, Pa.; J. S. Hess, Sinclair Refining Co., New York; W. E. Soden, Sun Oil Co., Marcus Hook, Pa.; E. E. Swope, Magnolia Petroleum Corp., Beaumont, Tex.; G. H. van Senden, Shell Oil Co., Shell Building, San Francisco, Calif.; C. L. Waite, Standard Oil Co. of New Jersey, New York; G. W. Watts, Standard Oil Co. (Indiana), Whiting, Ind., and George Westbrook, Gulf Refining Co., Port Arthur, Tex.

Committee on Motor Fuel Research: Chairman, R. P. Anderson, American Petroleum Institute, New York; A. L. Beall, Vacuum Oil Co., New York; Sydney Bevin, Tide Water Oil Co., Bayonne, N. J.; H. W. Camp, Empire Companies, Tulsa; A. Ludlow Clayden, Sun Oil Co., Philadelphia, Pa.; Graham Edgar, Ethyl Gasoline Corp., Yonkers, N. Y.; G. W. Gray, The Texas Company, New York; J. Bennett Hill, Atlantic Refining Co., Philadelphia, Pa.; C. O. Johns, Standard Oil Development Co., New York; Walter Miller, Continental Oil Co., Ponca City, Okla.; G. G. Oberfell, Phillips Petroleum Co., Bartlesville, Okla.; T. B. Rendel, Shell Petroleum Corp., Wood River, Ill.; Daniel Roesch, Armour Institute of Technology, Chicago; C. H. Schlesman, Standard Oil Co. of New York, Brooklyn, N. Y.; J. B. Terry, Standard Oil Co. of California, Richmond, Calif., and R. E. Wilson, Standard Oil Co. (Indiana), Whiting, Ind.

Committee on Fire Prevention in Refineries: Chairman, C. H. Haupt, Standard Oil Development Co., Elizabeth, N. J.; secretary, D. V. Stroop, American Petroleum Institute, New York; T. J. Callen, Jr., Wadhams Oil Co., Milwaukee, Wis.; H. W. Camp, Empire Oil & Refining Co., Tulsa; C. J. Cutting, Atlantic Refining Co., Philadelphia, Pa.; S. J. Dickey, General Petroleum Corp., Los Angeles, Calif.; H. H. Hall, Standard Oil Co. of California, San Francisco, Calif.; L. D. Jurs, Associated Oil Co., San Francisco, Calif.; W. W. Lowe, Henry L. Doherty & Co., New York; L. G. Metcalf, Union Oil Co. of California, Los Angeles, Calif.; Walter Miller, Continental Oil Co., Ponca City, Okla.; R. C. Powell, The Texas Company, New York; E. D. Seymour, Vacuum Oil Co., New York; C. W. Smith, Standard Oil Co. of Indiana, Chicago; D. E. Sullivan, Pure Oil Co., Chicago; T. B. Tifft, Sinclair Refining Co., New York; N. W. Thompson, Shell Oil Co., San Francisco, Calif., and C. E. Townsend, Sun Oil Co., Philadelphia, Pa.

Committee on Accident Prevention in Refineries: Chairman, C. W. Smith, Standard Oil Co. of Indiana, Chicago; secretary, H. N. Blakeslee, American Petroleum Institute, Dallas, Tex.; J. C. Bernd, Sinclair Refining Co., East Chicago, Ind.; R. W. Black, Standard Oil Co. of New Jersey, Elizabeth, N. J.; S. W. Candee Tide Water Oil Co., New York; Charles W. Coleman, Gulf Refining Co., Port Arthur, Tex.; V. R. Currie, The Texas Company, New York; H. E. Dischinger, Shell Petroleum Corp., St. Louis, Mo.; R. E. Donovan, Standard Oil Co. of California, Los Angeles, Calif.; J. H. Herbert, Standard Oil Co. of Ohio, Cleveland, Ohio; G. O. Lockwood, Empire Companies, Bartlesville, Okla.; W. C. Lynch, General Petroleum Corp., Los Angeles, Calif.; S. H. McKenty, Atlantic Refining Co., Philadelphia, Pa.; A. A. Odell, Barnsdall Refineries, Inc., Tulsa; G. F. Prussing, Union Oil Co. of California, Los Angeles, Calif.; and C. L. Swim, Skelly Oil Co., Tulsa.

Committee on Corrosion of Refinery Equipment: Chairman, Walter Samans, Atlantic Refining Co., Philadelphia, Pa.; secretary, D. V. Stroop, American Petroleum Institute, New York; J. E. Biggins, Gulf Refining Co., Port Arthur, Tex.; Mark W. Daw, Shell Oil Co., San Francisco, Calif.; E. S. Dixon, The Texas Company, Port Arthur, Tex.; A. E. Harnsberger, Pure Oil Co., Chicago; C. H. Haupt, Standard Oil Development Co., Elizabeth, N. J.; K. V. King, Standard Oil Co. of California, San Francisco, Calif.; L. G. Metcalf, Union Oil Co. of California, Los Angeles, Calif.; N. B. Musser, Sun Oil Co., Philadelphia, Pa.; L. W. Parsons, Tide Water Oil Co., Bayonne, N. J.; J. B. Rather, Standard Oil Co. of New York, Brooklyn, N. Y.; E. D. Seymour, Vacuum Oil Co., New York; S. S. Shaffer, Humble Oil & Refining Co., Baytown, Tex.; Thomas B. Tifft, Sinclair Refining Co., New York, and W. G. Whitman, Standard Oil Co. of Indiana, Whiting, Ind.

REFINERY PRICES START YEAR UNCHANGED

(Continued from Page 20)

ly sells products which are not generally known by the consuming public and a majority of the car owners will not shift their business to these sellers unless there is wide difference in quotations.

The fact that Ethyl Gasoline is not available to the price cutter is an important factor in this situation. The consumer demand for Ethyl Gasoline continues to increase with all but three or four of the major distributors offering the product at their stations. It has contributed materially to a situation in which the consumers of gasoline have become "quality conscious" and less interested in price.

There are those in touch with market conditions who are familiar with the crude oil and tank wagon situation just outlined, who still believe that it is premature to expect any improvement in the market for refined products. They contend that the market should be allowed to continue at present price levels until there is more definite indications that an advance can be permamently supported. They fear that low priced material will continue to be available from several sources if gasoline quotations are advanced and they also desire a stronger crude oil situation as a basis for any improvement in refinery markets.

Statistical Situation

The accompanying table summarizes the Mid-Continent refinery situation by areas based on the latest report of the Bureau of Mines, which includes operations up to December 1, 1930. From the producing and inventory angles, Mid-Continent refiners as a group are unquestionably in a stronger position than they were a year ago. Due to the curtailment of crude oil runs to stills there have been substantial reductions in production of kerosene, fuel oil and gas oil. There has been little change in the production of gasoline due to the expansion of cracking facilities which has offset the decline in crude runs to stills.

Kerosene stocks on December 1 were approximately 40 per cent less than they were a year previous with a small reduction in fuel oil and gas oil. Gasoline stocks were slightly greater on December 1 than on the same date in 1929.

If this relative situation obtained in December and can be continued over the first quarter of the new year, it is believed that the Mid-Continent refiners as a group will enter the main gasoline consuming season in a much stronger position than they were last year.

Gasoline and Naphtha

One large refiner on Monday reported more gasoline orders than any day since early in November. In the case of this refiner the business was principally on contracts coming from jobbers, several of whom had allowed their storage to be reduced the latter part of December. Other refiners reported a more active market.

At the same time the U. S. Motor gasoline grade continued to be available for resale under 4 cents with 4⅛ to 4½ cents the principal quotations on spot business to the trade. The higher gravity grades were unchanged in price with a routine demand.

Natural Gasolines

The A and AA grades of natural gasoline were steady the first of the week, the A grade being quoted at 3¼ cents and AA at 3 cents. A large order of a specially stabilized grade of natural gasoline placed with a Mid-Continent manufacturer by a Gulf Coast refining organization for January delivery, has improved the statistical situation so far as A and AA grades are concerned.

The remaining grades, however, are weak at 2½ cents. Few buyers are interested in Grade BB and Grade C despite the low prices, preferring to pay the higher prices for the A and AA grades. A few manufacturers shift from AA to BB or C when cold weather arrives, due to the fact that they do not have the equipment to fractionate efficiently for the higher recovery products.

At the same time, many refiners who have to stabilize their pressure distillate and cracked gasolines in order to get away from high vapor pressures do not want the BB and C grades. It is this change in the manufacturing and marketing situation which the manufacturers, under the sponsorship of the Natural Gasoline Association of America, are attempting to remedy in their new grades and specifications recently announced.

The manufacturers hope to secure a balance as to the grades which will do away with the possibilities of overproducing one grade to the detriment of the price situation for all grades.

Other Products

Nothing new was reported by Oklahoma buyers and sellers in regard to kerosene, fuel oil, gas oil, furnace oil, lubricants and wax. Except for the low cold test grades of gas oil with a low flash suitable for furnace oil, the supplies were adequate and prices were no more than holding their own.

In the furnace oils, the high gravity straw or prime white distillates are more readily available than are the lower gravity gas oils. The latter have the advantage of more B.t.u. per gallon and when they can be handled by the burners are more desirable as furnace fuel. The fact that many refiners are dumping their kerosene cuts into their distillate tanks in order to get rid of the former has also tended to increase the supply of the high gravity furnace oils.

Lubricants and wax are still classed as weak by most sellers as well as buyers. Price ranges are unchanged.

CALIFORNIA MARKET WEAKER

LOS ANGELES, Calif., Jan. 3.—Although no great change was recorded in California refined oil prices, a slight weakening has been noted since the first of the new year. All grades of natural gasoline are lower.

The 400 endpoint domestic gasoline for local consumption was off one-fourth of a cent per gallon but the price of this commodity for export and off-shore shipment remained unchanged. Furnace oil and distillates were in good demand due to lowered temperatures over the holiday season and smudging operations in both northern and southern California.

Spot crude oil in the Playa Del Rey Field of Los Angeles Basin continued to exert an unfavorable effect on both gasoline and fuel oil prices. The inability of Umpire Neal Anderson to enforce curtailment work in this field has so far prevented any hope of stabilization but this situation is expected to reach a crisis within the next 15 days. Future price schedules for California will depend upon the outcome of negotiations now under way in this field.

CALIFORNIA CRUDE OIL PRICES

(Continued from Page 109)

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 50 cents.

Column 5—Price change posted by Standard of California September 16.

Column 6—Oil below 14 gravity posted at 45 cents.

Column 8—Posted by General Petroleum Co.

Kettleman Hills—Union Oil Co., September 22, 35 to 39 gravity, $1.10; 40 to 44 gravity, $1.20; 45 to 49 gravity, $1.35; 50 to 54 gravity, $1.50; 55 gravity and above, $1.65. Standard Oil Co. of California, 55 gravity and above, $1.65.

UNIT OPERATION COMMITTEE

A meeting of the American Petroleum Institute's central committee on unit operation has been called for January 8 by Chairman W. N. Davis, Phillips Petroleum Co. The session will follow that of the board of directors at institute headquarters, 250 Park Avenue, New York.

Interior view showing Westcott orifice meters in use by Louisiana Gas & Fuel Company (a unit of the United Gas System) at the Guthrie Station of the Memphis Natural Gas Company near Fairbanks, Louisiana. These meters measure the flow through three 12-inch pipe runs.

Ready for the Big Flow

A modern station in every way—a station to be proud of; scientifically planned; thoroughly equipped; meticulously cared for—clean as a pin.

Enough Westcott orifice meter capacity to handle a maximum flow of gas of 125 million cubic feet a day, at 200 lbs. pressure.

Prepared, as a large-capacity station should be, for accurate registration.

To be ready at all times to show each day's exact deliveries and output, the owners and operators depend on the meter that has been the main dependence of the industry for 15 years.

All phases of measurement by Westcott orifice meters are fully described in Bulletin No. E-2.

METRIC METAL WORKS
ERIE, PENNSYLVANIA
IRONCASE, TIMBREL STEEL CASE and ORIFICE METERS

AMERICAN METER COMPANY
INCORPORATED
The World's Largest Manufacturers of Gas Meters and Allied Apparatus
ESTABLISHED 1836

SALES · · · ERIE - DALLAS - TULSA - DENVER - LOS ANGELES - SAN FRANCISCO - KANSAS CITY - BIRMINGHAM
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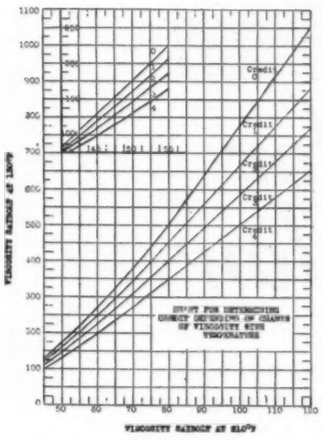
Of Interest to Sales Departments

Propose Change in Specifications for Motor Lubricants

The Federal Specifications Board has submitted a proposed revision of specifications for Class D lubricants which includes a system of grading or evaluating these oils numerically according to a fixed credit allowance. The lubricant must meet the basic requirements and if so is credited with an arbitrary value of 100. To be acceptable, the oil must be superior in a sufficient number of points to be credited with a total score of 115. This method of evaluation applies to 6 grades of oil, for use in internal combustion engines except aircraft and Diesel engines.



These six grades correspond to those having an S. A. E. number between 20 and 70. The specifications for all grades provide that only refined oils, without the admixture of fatty oils, fatty acids, resins, soaps or other compounds not derived from crude oil will be acceptable. It further provides that a quart sample be submitted to the Bureau of Standards or other government laboratory for testing and acceptance. The sample must be accompanied by a report of the results of tests as listed under F-3 which follows and made in the vender's laboratory according to the United States Government specifications No. D2, except that the Sligh oxidation number shall be determined according to the method described in Proc. A. S. T. M., Vol. 27, Part 1, pp. 461-468; 1927, using precipitation naphtha described in Proc. A. S. T. M., Vol. 29, Part 1, p. 364; 1929. Viscosities are to be given at both 130° and 210° F. for each sample.

Oils must meet all the tests of Table 1, below, must obtain a rating of at least 115 as explained and must meet the following requirements in regard to oxida-

(Continued on Page 127)

DISTRIBUTION BASE FOR SUN

Construction work on the warehouses and piers of the new distribution base of the Sun Oil Co. on the eastern bank of the Hudson River, opposite Albany, will begin this spring. The probable cost of the project has not been announced but it is understood to be in excess of $300,000.

In raising and leveling of the construction site and adjoining acreage, the Sun company was assisted by the Shell Eastern Petroleum Corp., the Gulf Refining Co., the Cities Service Oil Co. and the Tide Water Oil Co., whose lands are contiguous to the Sun property.

OIL BURNER SALES POINT TO SMALL GAIN IN DEMAND FOR FURNACE OILS

By Walter F. Tant
President American Oil Burners Association

If any proof were needed that the buying power of the American home owner is still strong in spite of the depression of the past 15 months, it would seem to be provided in the fact that the oil heating industry has just closed the most active year in its history. Since no industry more closely reflects the purchasing power of the people who own their own homes, this record must stand as a fair indication of the strength and soundness of this solid class of citizens.

Had the sales of domestic oil burners only equalled those of 1929, it would have been remarkable in view of the prevailing conditions and if they had fallen behind the 1929 total it would not have been surprising. But the fact that sales in 1930 were approximately 2 per cent ahead of the previous year is a direct challenge to those gloomier business prophets who think and speak only in terms of a downward trend.

At the end of 1929 statisticians predicted that by the end of the current year there would be 650,000 domestic oil burners installed in American homes. This estimate was arrived at after the prevailing depression was more than three months old and after many prominent industrialists had predicted an early upturn during the spring months. Consequently the estimate included an allowance for improved conditions. Actually, based on authentic information there will be slightly more than 654,000 burners in use by the end of December, 1930. The sales for the year will be a little over 125,000 burners.

These 125,000 burners represent a total manufacturers' gross of more than $20,000,000. With the accessories and installation costs added they represent a consumer outlay of approximately $69,000,000 which is less than the 1929 dollar volume. This is due to price adjustments made during the year. It is interesting to note that while the vast bulk of this business was centered in the domestic market, the foreign demand for American burners was greater this year than ever before and exports took a decided jump.

This increased activity within the industry constitutes an achievement even greater than the figures indicate. The sales activity involved in the distribution of these 125,000 burners was much greater in proportion than the two per cent increase in total sales would indicated, due in part to the general retrenchment tendencies and partly to competition both within and without the industry.

It also should be borne in mind that this total was reached despite the marked slump in building activities which usually exerts some influence on the sale of oil burners. Residential building alone declined $771,000,000 during the year and the total decline in all building activity was more than $1,260,000,000. This means that the market for oil burners provided by new buildings and modernized homes was just this much less in 1930 than it was in 1929.

For the first nine months of 1930 activity was at a peak and the industry as a whole was approximately 11 per cent ahead of the corresponding period in 1929. During the last three months sales fell off rather sharply, however, due mainly

(Continued on Page 134)

LUBRITE ADDS TO TOTAL OUTLETS FOR MOBILGAS

As a part of the program of expanding the markets of the Vacuum Oil Co. into the central states, Mobilgas, is being introduced in the St. Louis area through the stations of the Lubrite Refining Corp. The product was introduced less than a year ago through the Vacuum Oil Co.'s stations in the East and more recently was introduced west of the Mississippi River in the St. Louis area preceded by an intensive advertising campaign. A parade including 114 floats, trucks and cars traversed 29 miles of streets in St. Louis and was followed by a banquet given H. T. Ashton, president of the Lubrite, attended by more than 1,000 marketers and representatives of the Vacuum and subsidiary companies.

The Lubrite Refining Corp. has placed the new motor fuel on sale at all of its 208 stations in St. Louis and Illinois. In making this announcement, Mr. Ashton pointed out that all of these stations have been built or acquired within the past seven years for prior to that, the company did not operate retail marketing facilities. As a result of the Vacuum Oil Co. affiliating with marketing companies holding important local positions, it has increased the number of outlets to more than 125,000.

CITIES SERVICE BUYS STATIONS

CHICAGO, Jan. 3.—The Cities Service Co. has bought the jobbing business of the Tri-County Oil Co. of Kimball, Minn. The purchase includes bulk stations at four points as well as retail stations and outlets.

HARBOR WATERS CLEANED BY OIL SALVAGING CRAFT

LOS ANGELES, Calif., Jan. 5.—The saving of thousands of dollars in cleaning bills, with the elimination of a dangerous fire hazard, is the appointed task of a sea-going vacuum sweeper which picks up the fuel for its engines from the waves in Los Angeles Harbor. During working hours, the oil salvaging craft, Pasadena, which is fitted with vacuum tanks, air compressors, separators, pumps and miles of piping, sucks up pools of oil floating on the water. On occasion the Pasadena's nozzle dips into the ships' bilges and tanks and speeds up a cleaning job.

With the oil salvaging craft bustling about in the harbor, the incoming ships need not stop outside to clean tanks. While the passengers are disembarking the craft is busily taking in the mixture of oil and salt water, sending the cleaned oil into its fuel tanks and pouring back the water into the bay.

RULING ON TAXABLE GASOLINE

The attorney general's office in Alabama has written an opinion ruling that gasoline withdrawn from storage in the State is subject to the state gasoline tax, even though it is later used in interstate commerce. According to the opinion, the gasoline has passed out of interstate commerce and is subject to tax when it is imported, comes to rest within the State and is withdrawn from storage. It is pointed out, however, that a Federal district court ruling has been passed upon the Oklahoma law which does not exact a tax on gasoline taken from storage.—C. E. K.

Permanent Solution Gaining in Use as Antifreeze Mixture

By W. A. Jacobs
Bureau of Standards*

The first requirement of an antifreeze solution is that it shall not injure either engine or radiator by freezing at the lowest temperature which may be encountered. To be satisfactory, such a solution should cause no damage to the cooling system through corrosion or solvent action and should circulate freely at the lowest operating temperature.

The bureau's investigations of the corrosive effects of various solutions upon the metals commonly employed in radiator construction show that practically all salt solutions (such as calcium chloride or magnesium chloride) exert appreciable corrosive effect while solutions of organic materials (such as sugar, alcohol or glycerin) cause no more corrosion than ordinary tap water.

Solutions of alcohols (including glycerin and glycol) includes the most satisfactory solution for automobile radiator use which the bureau has tested. This group includes denatured alcohol, wood alcohol or methanol (synthetic wood alcohol), glycerin and ethylene glycol.

Denatured alcohol solutions are the most generally used radiator solutions. The chief objection to this alcohol, however, is that it continually boils out of the solution and must be replaced frequently in order to maintain adequate protection against freezing. Another disadvantage in its use is the fact that the boiling points of denatured alcohol solutions are appreciably lower than the boiling point of water so that average cylinder temperatures tend to be lower in winter than in summer. Further criticisms of denatured alcohol solutions are based on the unpleasant odor of certain denaturants and the fact that nitrocellulose finishes are particularly likely to become spotted in case alcohol is splashed or spilled on them.

Wood alcohol or methanol solutions are more volatile and have lower boiling points than the corresponding denatured alcohol solutions, thus making most of the objections to denatured alcohol apply with even more force to wood alcohol. On the other hand, about 10 per cent less wood alcohol is required for protection against freezing at any given temperature. Wood alcohol, however, sometimes contains free acid which is objectionable and for this reason should not be used unless it is known to be free from acids. In addition to its unpleasantness, the fumes from wood alcohol may be harmful.

Glycerin, having a high boiling point and being practically nonvolatile up to the boiling point of its 50 per cent aqueous solution, will last for an entire sea-

(Continued on Page 127)

*Mr. Jacobs is connected with the automotive division of the Bureau of Standards.

USING ALCOHOL FUEL

NEW YORK, Jan. 3.—The Brazilian Central Railway has successfully experimented with alcohol as a fuel for railway motor cars, according to reports reaching here.

The fuel utilized consisted of 42° alcohol, with an addition of 5 per cent of ethyl methylene extracted from the alcohol, and 0.001 of methylene blue as a denaturant. Consumption of alcohol fuel was 1.1 liters per kilometer, against 1 liter when using gasoline. The cost of the alcohol, however, is but 50 per cent that of gasoline, and alcohol can be made in Brazil utilizing excess sugar cane output, while gasoline must be imported.

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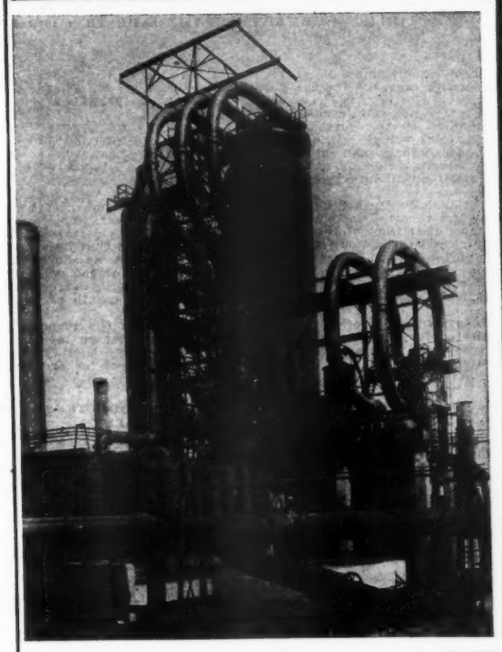

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Install Milled Groove Instead of Wishing You Had

VALUE OF ALL REFINED PRODUCTS EXCEEDS TWO AND HALF BILLION

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Jan. 3.—The total shipments or deliveries of gasoline and other products by petroleum refineries in the United States in 1929 were valued at $2,597,370,104 (at f.o.b. factory prices) the Bureau of the Census announces according to a preliminary tabulation of data collected in the census of manufacturers taken in 1930.

This figure represents an increase of 21.7 per cent as compared with $2,133,922,688 reported for 1927, the last preceding census year.

The 1929 total is made up as follows: 17,982,832,107 gallons of gasoline and naphtha, valued at $1,579,082,717; 216,226,775 gallons of other light products of distillation, $13,898,196; 2,332,437,794 gallons of illuminating oils, $164,009,087; 16,134,961,225 gallons of fuel oils, $379,682,995; 1,423,414,222 gallons of partially refined oils sold for re-running, $48,435,537; 1,546,000,126 gallons of lubricating oils, $301,922,011; other products and by-products of petroleum refining, $110,339,561.

In addition, lubricating greases are produced to a large extent by establishments classified for census purposes in the "lubricating oils and greases, not made in petroleum refineries" industry. The total production of greases in that industry was valued at $16,829,012 in 1929 and $9,781,858 in 1927.

This industry, as defined for census purposes, embraces establishments engaged primarily in refining crude petroleum by distillation. It does not, therefore, cover the compounding of refined or partially refined petroleum products nor the production of natural gasoline from natural gas at the wells.

The statistics for 1929 and 1927 are summarized in Table 1, and detailed product statistics are given in Table 2. Figures on the kinds and quantities of the principal materials consumed are given in Table 3. The figures for 1929 are preliminary and subject to revision. (See explanatory note below).

TABLE 1—SUMMARY FOR THE INDUSTRY: 1929 AND 1927

	1929	1927	Per cent of increase
Number of establishments	375	354	5.9
Wage earners (average for the year)*	76,840	71,234	7.9
Wages†	$125,948,505	$113,716,705	10.8
Cost of materials, containers for products, fuel, and purchased electric current†	2,055,734,186	1,752,997,043	17.3
Products, total value†	2,611,680,940	2,142,648,503	21.9
Petroleum products and by-products, value	2,597,370,104	2,133,922,688	21.7
Other products, value	14,310,836	8,725,815	64.0
Value added by manufacture‡	555,946,754	389,651,460	42.7

* Not including salaried employes. The average number of wage earners is based on the numbers reported for the several months of the year. This average somewhat exceeds the number that would have been required for the work performed if all had been continuously employed throughout the year, because of the fact that manufacturers report the numbers employed on or about the 15th day of each month, as shown by the pay rolls, usually taking no account of the possibility that some or all of the wage earners may have been on part time or for some other reason may not actually have worked the entire month. Thus in some cases the number reported for a given month exceeds the average for that month.

†Manufacturers' profits cannot be calculated from the census figures because no data are collected for certain expense items, such as interest on investment, rent, depreciation, taxes, insurance, and advertising.

‡Value of products less cost of materials, containers for products, fuel, and purchased electric current.

TABLE 2—PETROLEUM PRODUCTS AND BY-PRODUCTS—PRODUCTION, BY KIND, QUANTITY AND VALUE

	1929	1927
Aggregate value	$2,597,370,104	$2,133,922,688
Light products of distillation, total:		
Gallons	18,199,058,882	13,391,340,090
Value	$1,592,980,913	$1,102,154,007
Gasoline and naphtha*—		
Gallons	17,982,832,107	†13,180,880,160
Value	$1,579,082,717	†$1,090,954,909
Benzine—		
Gallons	61,071,945	50,556,053
Value	$5,276,195	$4,625,309
Tops—		
Gallons	155,154,830	159,903,872
Value	$8,622,001	$6,573,789
Illuminating oils:		
Gallons	2,332,437,794	2,217,590,680
Value	$164,009,087	$147,925,073
Fuel oils, total:		
Gallons	16,134,961,225	15,415,859,725
Value	$379,682,995	$456,959,052
Distillates—		
Gallons	1,005,280,451	976,669,534
Value	$38,391,443	$44,286,925
Gas oils—		
Gallons	2,845,053,018	2,576,590,816
Value	$94,671,560	$99,327,962
Residual fuel oils—		
Gallons	12,284,627,756	11,862,599,375
Value	$246,619,992	$313,344,158
Partially refined oils sold for re-running:		
Gallons, total	1,423,414,222	1,583,726,709
Value, total	$48,435,537	$62,210,180
Lubricating oils, total:		
Gallons:	1,546,000,126	1,381,901,726
Value	$301,922,011	$244,629,175
Red or neutral; viscosity 100° Universal or higher; or flash 400° F. or over, closed cup (not including cylinder oils)—		
Gallons	544,586,749	531,627,390
Value	$86,165,679	$87,243,433
Cylinder oils—		
Gallons	237,087,171	219,673,302
Value	$62,887,145	$43,036,477
Other lubricating oils, including compounded (except cylinder) and undistributed oils—		
Gallons	764,326,206	630,601,034
Value	$152,869,187	$114,349,265
Liquid asphaltic road oils:		
Gallons	320,669,618	204,798,873
Value	$10,998,093	$9,307,835
Residuum or tar:		
Gallons	96,340,001	113,467,429
Value	$2,853,680	$5,117,723
Greases, total‡:		
Gallons	57,671,745	63,039,324
Value	$16,773,804	$12,961,205
Paraffin wax:		
Gallons	84,225,484	94,257,226
Value	$22,220,782	$23,432,260
Acid oil:		
Gallons	34,766,976	90,607,047
Value	$662,611	$1,848,797

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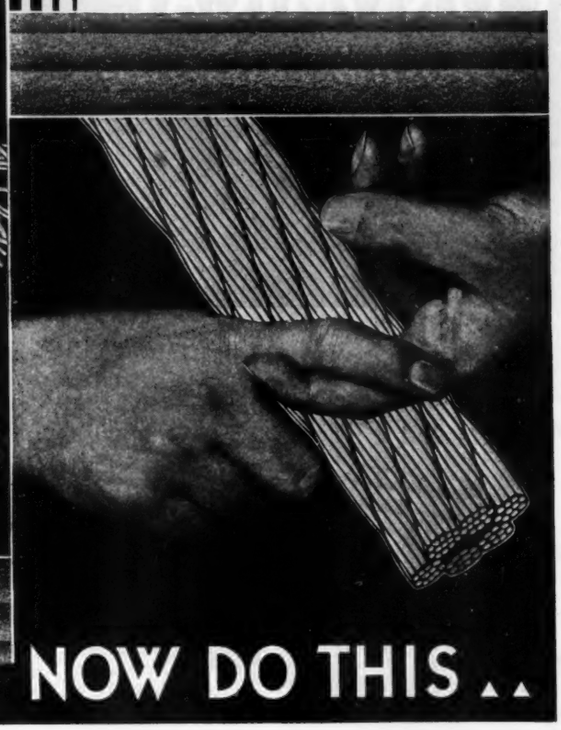

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Cross your fingers and note the pressure—move your fingers and note the rubbing action. In Tru-Lay Preformed Wire Rope this internal stress and excessive rubbing action is eliminated. Strands and wires are shaped to fit perfectly together. They lie normally in position as when you hold your two hands together as shown above.

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Resistant to corrosion, erosion, and abrasion, the long life of "Stainless Equipment" makes its added cost a cumulatively profitable investment. Stainless is available from 150 to 600 Brinell and from 60,000 to 250,000 pounds per square inch tensile strength. There is a type for every need.

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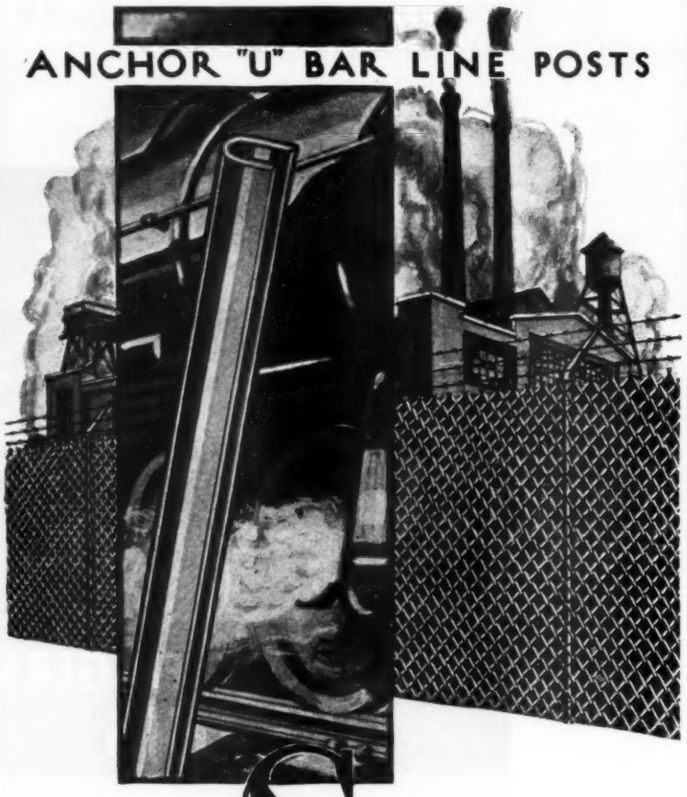

STRONG *as a steel rail*

THE strength of the posts is the strength of the fence. If the posts are weak the entire structure soon becomes a wobbling enclosure.

The Anchor U-Bar Line Posts have been proven by actual and mechanical tests to possess superior strength. They are rerolled from steel rails which bespeaks their toughness. Further, formed in the shape of a "U," additional resistance to bending is obtained.

The Anchor U-Bar Line Post is only one of the reasons why Anchor Fences provide lasting protection.

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ANCHOR FENCES

MADE BY THE MAKERS OF AMERICA'S FIRST CHAIN LINK FENCE

	1929	1927
Asphalt, other than liquid asphalt:		
Tons (2,000 pounds)	3,089,619	2,642,324
Value	$84,273,218	$37,884,108
Coke (petroleum coke):		
Tons (2,000 pounds)	1,264,947	1,243,510
Value	$5,461,551	$7,169,596
Other refinery products, value‡	$17,095,792	$22,323,725

*Naphtha represents about 4 per cent of the total value. Separate figures for naphtha will be shown in the final report. †Revised. ‡See second paragraph of text. §Oils in process, still gas, etc.

TABLE 3—PRINCIPAL MATERIALS CONSUMED

Kind—	1929 (bbls.)	1927 (bbls.)
Crude petroleum	982,422,872	831,331,822
Partially refined oils, waxes, tops, etc.	45,364,347	33,939,307
Natural gasoline	45,042,512	26,383,114

This preliminary report has been given to make census statistics available at the earliest possible date and it is believed differences from the final report will not have material effect on the value of these figures for practical purposes.

PROPOSE CHANGE IN MOTOR LUBRICANTS

(Continued from Page 122)

tion, neutralization number and corrosion:

(a) The Sligh oxidation number must not be over 40.

(b) The neutralization number, method 510.31, must not be over 0.30.

(c) A clean copper strip shall show not more than extremely slight discoloration when submerged in the oil, method 530.31.

TABLE 1—TEST REQUIREMENTS

S.A.E. No.	Viscosity sec. Saybolt Universal — 130°F. min.	Max. less than	Min.	210°F. max. less than	Min. flash-point, °F.	Darkest A.S.T.M. color No.	Max. pour-point, °F.	Max. carbon residue, %
20	120	185	...	...	335	7½	40	.45
30	185	225	...	...	355	8	50	.70
40	255	...	...	75	360	6 Dil	50	1.00
50	...	...	75	105	380	7 Dil	50	1.60
60	...	...	105	125	400	8 Dil	50	2.00
70	...	...	125	150	420	8 Dil	50	2.50

F-4. Oil No. S.A.E. 20 may be required by the purchasing department to have a maximum pourpoint of 15° F. If a maximum pourpoint of 15° F. is specified, unit credit as given in Table 2 shall be computed on the basis of a maximum pourpoint of 40° F., as for the regular S.A.E. 20 oil.

F-5. Fulfilment of the requirements of Paragraph F-3 will be considered as representing a rating of 100. To be acceptable the oil sample must be rated not less than 115, the extra 15 points being the total of the credits obtained by surpassing these requirements in one or more particulars.

F-6. To compute the credit to be assigned for excellence in each particular test, use is made of an arbitrary credit assigned to each unit difference between the minimum requirements and the value obtained by test. These unit credits are listed in Table 2.

TABLE 2—UNIT CREDITS

Test Item	Credit
Flashpoint,	0.02 per degree F.
Color, A.S.T.M.	0.5 per unit
Pourpoint*,	1.0 each 5° F.
Neutralization No.	20 per unit
Carbon residue,	10 per 1%
Oxidation No.	0.2 per unit
Effect of temperature on viscosity	(†)

*Oils with pourpoints below 0° F. will be credited with zero pourpoints.

†A total credit ranging from zero to 4 will be assigned depending upon the rate of decrease of viscosity with increase of temperature, as shown by Figure 1.

PERMANENT SOLUTION IN ANTIFREEZE MIXTURE

(Continued from Page 122)

son without further addition, provided the cooling system is free from leaks. The volume of the solution when cold should be slightly less than the full radiator capacity, otherwise the expansion of the liquid when heated will cause it to overflow with consequent waste. If desired, the glycerin solution can be drawn off at the end of the season and saved for further use. The colorless c.p. (commercially pure) glycerin and commercial grades of yellow distilled glycerin are equally satisfactory for radiator use. Crude glycerin on the contrary is undesirable as it usually contains salts which promote corrosion.

Glycerin Solutions

The more concentrated glycerin solutions are distinctly more viscous than the corresponding solutions of denatured alcohol at low temperatures. This may be a disadvantage with certain types of cooling systems in very severe climates but, under average conditions, distilled glycerin appears to be superior to denatured alcohol for radiator use.

The addition of about a half gallon of glycerin and a half gallon of denatured alcohol to water makes a solution which gives slightly more protection against freezing than would be obtained by adding a gallon of glycerin or a gallon of alcohol alone. The customary use of a glycerin-alcohol-water solution has the disadvantage that both alcohol and water will evaporate from such a solution at different rates and it becomes a difficult matter to determine how much of each should be added to replace the evaporated loss. On the other hand, where the winter temperature seldom goes below 0° F. a 35 or 40 per cent glycerin-water solution will ordinarily give adequate protection. In case of exceptional drop in temperature it might be economy to add some alcohol for temporary additional protection rather than to add more glycerin.

Ethylene Glycol

Ethylene glycol solutions give more protection against freezing than either glycerin or denatured alcohol solutions of the same strength. Like glycerin, ethylene glycol is practically nonvolatile at operating temperature and its solutions are noncorrosive. Unlike glycerin, ethylene glycol solutions are only slightly more viscous at low temperatures than denatured alcohol solutions of equal concentrations. Hence, solutions of ethylene glycol appear to be superior to denatured alcohol solutions under all circumstances and, at least for very severe climates, to offer some advantages over distilled glycerin solutions.

Ethylene glycol solutions can be used for an entire season without further addition of glycol and also may be drawn off at the end of the season and saved for use again. The same precautions mentioned in the case of glycerin should be taken in filling the radiator, otherwise the expansion of the liquid when heated will cause it to overflow. The specific gravity of ethylene glycol is not high enough to necessitate mixing the glycol with water before it is put into the radiator.

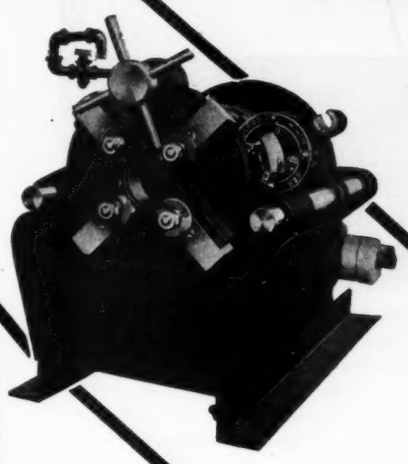
It is important before applying any antifreeze that the cooling system be absolutely leakproof. Radiator hose, head gaskets, etc., should be perfectly tight before injecting the solution. Next in importance is to use the right amount of the solution in proportion to the capacity of the cooling system.

COLON PRODUCTION

Production of Colon Oil Corp.'s subsidiary in Venezuela for the week ended December 19, was 116,705 bbls.

"TOLEDO"

MANUFACTURING PRECISION—FINEST MATERIALS—30 YEARS EXPERIENCE—MEANS THE FINEST PIPE TOOLS KNOWN—"TOLEDOS" ARE GOOD AS GOLD



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DON'T LET THREADING AND CUTTING SMALL PIPE SLOW UP YOUR WORK— . . . .

—when the sensational "TOLEDO" No. 999, ½" to 2" pipe machine is available at such a low cost.

All sizes from ½" to 2" threaded easily and quickly. 2" pipe is threaded in 30 seconds and cut off in 15 seconds. Smaller sizes even faster. Every thread perfect and standard as the No. 999 uses a separate die head for each size pipe, assuring accurate threads and easy die change.

It's portable! The No. 999 weighs but 275 lbs. and is easily carried by two men. The machine is equipped with a universal motor that can be connected to any 110-volt lamp socket.

The modern way to thread and cut small pipe. Why not investigate it? We will be glad to send circular and low net price.

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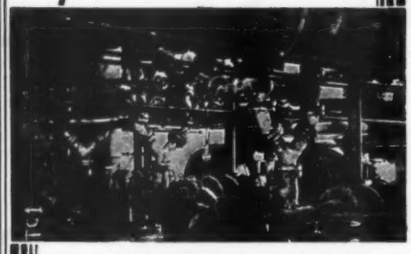

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WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 34)

HARPER COUNTY

Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w .....Drlg. 7,847 ft.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w .....20,000,000 ft. gas 5,350-5,400 ft.; total depth 8,589 ft.; shut down; sprayed 50 bbls. gasoline.

HASKELL COUNTY

Ault et al's No. 1 Hall, NW SW SW Sec. 14-9-19 .....Shut down 1,575 ft.
Ault et al's No. 1 Hall, SE NW Sec. 25-9-19 .....Rig.
I. T. I. O.'s No. 1 Blake, SW NW Sec. 3-10-21 .....Shut down 3,007 ft.
Mid-Western's No. 1 Poister, C NE SE Sec. 33-10-22 ....Shut down 4,297 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 .....Shut down 1,645 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10 .....T. D. 4,775 ft.; Cromwell sand 4,760-68 ft.; water; plugged back to 4,275 ft.

KAY COUNTY

Wilright Gas Co.'s No. 1 Wildegrube, NE SW Sec. 14-27-1 .....Spudding.
Lewis et al's No. 1 Harris, SE NW Sec. 14-28-1 .....Location.
Peters & Buckles' No. 1 Hayes, NW NE NW Sec. 24-28-3 .....Drlg. 1,450 ft.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-3 .....Drlg. 1,939 ft.
Blackwell Oil & Gas Co.'s No. 1 Harshman, Sec. 2-26-1w..Rig on ground.
Boucher Oil Co.'s No. 1 Jefferson, NE SW Sec. 32-26-1w..Fishing 1,175 ft.

KINGFISHER COUNTY

Prairie and Slick's No. 1 Wright, C NW SW Sec. 23-15-5w .....T. D. 6,390 ft.; plugged back to 5,100 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w .....Abandoned 7,931 ft.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE Sec. 8-7-15w .....Rig.

LATIMER COUNTY

Mid-Western's No. 1 Unknown, C SE NW Sec. 15-6-21....Cellar.
P. English's No. 1 Unknown, NW SE Sec. 16-6-19 .....Drlg. 200 ft.
Mid-Western Oil & Gas' No. 1 Bullo, C E half SW Sec. 3-6-19 .....Drlg. 2,300 ft.
LeFlore Oil Co.'s No. 1 McBee, NW cor. Sec. 3-7-21 .....Shut down 3,661 ft.
Mid-Western's No. 1 Morris, C NW SE Sec. 12-6-21 .....2,075 ft.; plugged back to 1,561-1,950 ft.; 1,000,000 ft. gas; comp.
Limestone Oil & Gas Co.'s No. 1 Murray, NE cor. Sec. 25-5-18 .....Abandoned 2,765 ft.

LINCOLN COUNTY

Mote-Wheeler's No. 1 Stafford, NW NE Sec. 32-17-4 ....Spudding.

LOGAN COUNTY

Eason Oil Co.'s No. 1 Young, C SW NE SW Sec. 34-17-4w.Sand 4,919-42 ft.; made 870 bbls. 21 hrs. and 485 bbls. the second 24 hrs.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Drlg. 5,675 ft.

McLAIN COUNTY

Prairie's No. 1 Parkinson, SW NW Sec. 22-7-2w .....Drlg. 6,320 ft.

MUSKOGEE COUNTY

Rebold's No. 1 Miller, SE NE NE Sec. 32-13-19 .....Rig.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ....Shut down 1,011 ft.

NOBLE COUNTY

Barnsdall's No. 1 Miksch, NW SW Sec. 12-21-1 .....Drlg. 4,512 ft.

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 .....Shut down 4,127-57 ft.; water; plugged back to 3,161-85 ft.; showing 10 bbls.
E. L. Robinson's No .1 Rice, NW Sec. 2-10-9 .....Location.
Shepard et al's No. 1 Nevens, SE NW SW Sec. 3-12-10 ..Shut down 3,690 ft.

OKLAHOMA COUNTY

L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w .....Shut down 5,515 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Messer, SW cor. Sec. 32-14-3w .....Wilcox 6,697-6,771 ft.; shot with 90 qts. and 140 qts.; made 2,637 bbls. 7 days; shut down.
Warr et al's No. 1 Castle, SW NW Sec. 20-11-3w .....Wilcox 7,347-7,450 ft.; water; shut down.
J. F. Cuniff, trustee's No. 1 Church Land, NE SW SE Sec. 17-12-4w .....Shut down 6,700 ft.

OSAGE COUNTY

Millard & Stanley's No. 1, SE SW Sec. 4-28-7 .....Fishing 1,130 ft.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-5 .....Drlg. 1,700 ft.
Sperry et al's No. 1 Mullrap, SE SW Sec. 2-22-5 .....Shut down 1,740 ft.
L. E. Wents' No. 1 G. Lilly, SE SW NE Sec. 26-22-3 ....Drlg. 3,988 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5....Rig.

PITTSBURG COUNTY

J. Morrison's No. 1 Fowler, NE SE Sec. 13-7-17 .....Rig on ground.
C. Kennedy's No. 1 Travis, C SW NE Sec. 15-7-14 .....Rig.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 .....Rig.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW Sec. 23-12-24w .....Drlg. 2,555 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ....Shut down 2,905 ft.

SEMINOLE COUNTY

Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 35-5-5 .....Location.

STEPHENS COUNTY

Ross Southard's No. 1 McKinney, NE cor. Sec. 25-1-8w...Shut down 1,062 ft.
G. Pace et al's No. 1 Pruitt, SW cor. SE Sec. 8-1-5w....Drlg. 600 ft.

WASHITA COUNTY

Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w.Shut down 130 ft.
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18 .....Rig.
Petroleum Holdings, Inc.'s No. 1 Musie, NW cor. Sec. 10-9-20w .....Shut down 280 ft.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-22-17w .....Shut down 1,387 ft.
Prairie Oil & Gas Co. et al's No. 1 Wilbur, NE cor. NW Sec. 22-23-17w .....Shut down 7,445 ft.

OKLAHOMA PANHANDLE
TEXAS COUNTY

Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-1S .....Shut down 4,425 ft.
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-1Se .....Spudded; shut down.

SOUTHERN OKLAHOMA
ATOKA COUNTY

Bryant et al's No. 1 Southern Trust, C SW SW Sec. 3-1s-14 .....747-50 ft.; show oil to test.
Stewart-Howland's No. 1 Howard, NW SE NW Sec. 6-4s-11 .....Shut down 100 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 .....Shut down 400 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW Sec. 7-7-10..Shut down 510 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 .....Shut down 525 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-16s-7e ..Shut down 485 ft.
Marshall's No. 2 Fee, C SW NW Sec. 26-5s-7 .....Shut down; 6-in. csg. 365 ft.

CARTER COUNTY

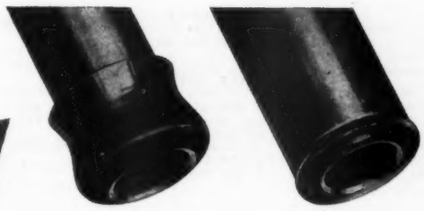
Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 .....Cleaning out 2,590 ft.

COTTON COUNTY

Gilbert-Lowery's No. 1 Harneg, C SE SE Sec. 4-2S-11w...Rig.

JEFFERSON COUNTY

J. H. Brown et al's No. 1 Norlett, SW NW NE Sec. 35-7s-8w .....Drlg. 1,770 ft.
Mutual Oil Co.'s No. 1 Sharp, SE NW Sec. 3-5s-8w .....Shut down 805 ft.



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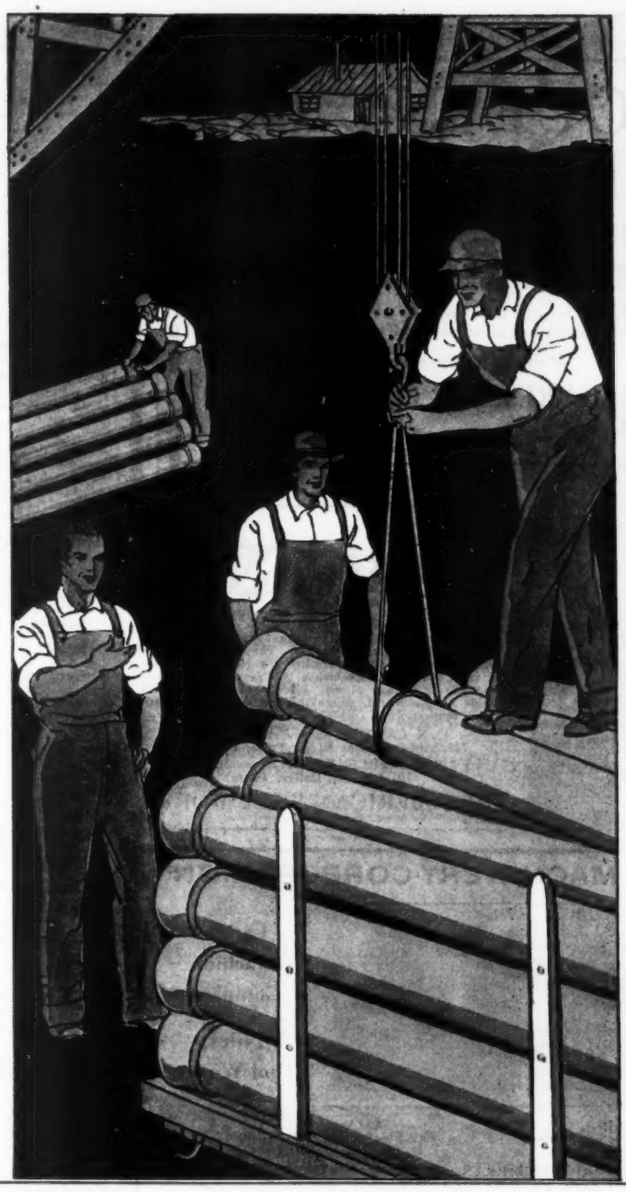

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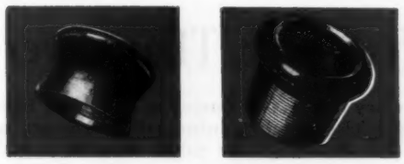

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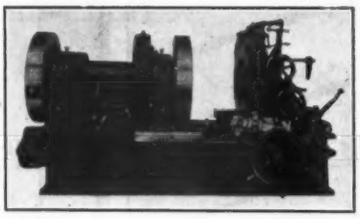

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LOVE COUNTY

G. Pace et al's No. 1 Burkhart, NE NW Sec. 13-8s-1 ... Shut down 660 ft.
Batson & Sterrette's No. 1 Dillard, SE NE NW Sec. 25-6s-2 ... Rig.
Hobbs et al's No. 1 Roberts, NE cor. SW Sec. 20-6s-3w... Shut down 3,130 ft.

MARSHALL COUNTY

D. H. Curry's No. 1 Ward, NE SE SW Sec. 15-5s-6 ... Shut down 1,275 ft.
McCrory et al's No. 1 Adams, NE SW SE Sec. 31-7s-6... Shut down 490 ft.
Akers et al's No. 1 Spicer, SW SE SE Sec. 33-5s-7e... Shut down 370 ft.

McCURTAIN COUNTY

Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 ... Shut down 2,287 ft.

STEPHENS COUNTY

Obermyer et al's No. 1 Skelton, NE SW SW Sec. 32-1S-7w ... Shut down 1,375 ft.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 38)

KIOWA COUNTY

Phillips-Prairie's No. 1 Bean, NE SE Sec. 10-30-17w ... Underreaming 6-in. csg. 5,200 ft.
McKenna et al's No. 1 Ralston, C NE Sec. 14-28-20w ... Rig.

LYONS COUNTY

Griffith et al's No. 1 King, NW cor. Sec. 8-19-10 ... Shut down 910 ft.

MARION COUNTY

Aladdin Pet.'s No. 1 Koch, NW NE Sec. 36-17-3 ... Rig.
Midwell's No. 1 La Master, NW cor. Sec. 31-22-4 ... Fishing 625 ft.

McPHERSON COUNTY

United Pet. Co.'s No. 1 Kaigi, NE cor. Sec. 20-19-1w ... Drlg. 1,670 ft.
Henderson & Holden's No. 1 Sommerfield, NE SW Sec. 23-19-1w ... Drlg. 2,450 ft.
Aladdin Pet.'s No. 1 Rudolph, NW NE Sec. 36-18-2w ... Rig.
Slick et al's No. 1 Randell, C SW SW Sec. 35-17-3w ... Drlg. 2,260 ft.
Aladdin Pet. Co.'s No. 1 Larson, C NW Sec. 22-18-4w ... Rig.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-34-43w ... Fishing 5-in. csg. 3,460 ft.

MORRIS COUNTY

Great Britain Oil Co.'s No. 1 Ballyntine, SW SE SE, Sec. 18-16-5 ... Drlg. 1,300 ft.
Urschell et al's No. 1 Bersuch, NW SE NW Sec. 10-17-7.. Machine.
Hankerson et al's No. 1 Cessman, SW SE Sec. 24-16-9.... Rig.

NESS COUNTY

Gypsy Oil Co.'s No. 1 Coleman, C SW NE Sec. 25-17-25w. Drlg. 2,130 ft.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w ... Rig.

OSAGE COUNTY

Briggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15 ... Drlg. 950 ft.

PAWNEE COUNTY

Phillips' No. 1 Cuthbertson, NE cor. Sec. 27-20-8w ... Drlg. 3,865 ft.

PRATT COUNTY

Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w ... Shut down 4,446 ft.

RAWLINS COUNTY

Danciger Oil & Ref.'s No. 1 Unknown, SW cor. Sec. 3-2-35w ... Shut down 2,005 ft.

RICE COUNTY

Allison-Fitzwilliams' No. 1 Blake, NE NW Sec. 9-18-10w.. Rig.
Gypsy Oil Co.'s No. 1 Koenig, SW NE Sec. 10-20-10w .... Drlg. 2,080 ft.
Muth Bros.' No. 1 Beyers, NE NW Sec. 21-19-9w ... Sand 2,000-02 ft.; 3,000,000 ft. gas; drlg. 2,940 ft.

ROOKS COUNTY

Empire Oil & Ref. Co.'s No. 1 Halsman, SW NE SE Sec. 17-7-20w ... Rig.

RUSH COUNTY

Dewey & Mitchell's No. 1 Greenawalt, C SW Sec. 17-19-16w ... Rig.
Syndicate Oil Co.'s No. 1 Lannen, C SW Sec. 11-18-16w.. Drlg. 3,090 ft.

RUSSELL COUNTY

Austin Drlg. Co.'s No. 1 Rochfellow, SE cor. Sec. 6-13-12w ... Show oil 3,042-44 ft.; bailed 18 bbls. 3 hrs.
Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w .... Shut down 2,335 ft.

SEDGWICK COUNTY

Streeter & Stearn's No. 1 Tobin, SW SE NE Sec. 5-22-2.. Drlg. 1,610 ft.
Buck et al's No. 1 McNananan, NE NW NW Sec. 2-29-1.. Rig.

SALINE COUNTY

Sampson et al's No. 1 Sudenderf, NE SE Sec. 30-14-2w.. Drlg. 2,100 ft.
Twin Mounds Oil Co.'s No. 1 Weis, C W-half NE NW Sec. 20-13-4w ... Shut down 2,700 ft.

STEVENS COUNTY

McNabb and Mid-Kansas' No. 1 Rhinehart, C NE Sec. 23-32-39w ... Shut down 1,612 ft.

WASHINGTON COUNTY

Bincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3 .... Shut down 1,720 ft.

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Gray County

Cockrell-McIlroy Oil Co.'s No. 9 W. M. Castleberry, 330 feet north and 990 feet west of the SE cor. of Section 126, Block 3, I.&G.N. Empire Gas & Fuel Co.'s No. 1 H. B. Ruscoe, 1,320 feet south and 660 feet west of the NE cor. of the W half of the SE of Section 11, Block 3, I.&G.N. Empire Gas & Fuel C.'s No. 3 J. J. Wall, 990 feet north and east of the SW cor. of the NW of Section 161, Block 3, I.&G.N. Magnolia Petroleum Co.'s No. 1 D. Eddington, 330 feet south and 370 feet west of the NE cor. of the NE of Section 34, Block B-2, H.&G.N.

Potter County

Canadian River Gas Co.'s No. 1 J. M. Crawford, 1,200 feet south and 1,174 feet east of the SE cor. of Section 77, Block 018 and located in Section 78.

NORTH CENTRAL AND WEST TEXAS

Archer County

L. E. Bennett's No. 1 L. F. Wilson (McCrory Tr.), 1,607 feet south and 1,748 feet east of the NW cor. of Section 111, A.T.N.C.L. H. P. Key's No. 1 R. D. Andrews, 450 feet south and 150 feet west of the NE cor. of the NW of the NW of Section 1,805, T.E.&L.

Coleman County

Arcadia Refining Co.'s No. 1 William Burkett, 150 feet north and 370 feet east of the SW cor. of the E. M. Justice Survey No. 165, being 150 feet north and east of the SW cor. of the William Burkett tract.

Cooke County

W. B. Hamilton and others' No. 3 C. Jacobs, 150 feet north and west of the SE cor. of the north 40 acres of the south 80 acres of the W. Caldwell Survey A-208.

Fisher County

Roeser & Pendleton's No. 1 W. M. Gribble, 660 feet north and 440 feet east of the SW cor. of the NW of Section 210, B.B.B.&C.

Garza County

Penny & Poesey's No. 1 J. D. Justice, 1,980 feet north and 1,680 feet west of the SE cor. of Section 25, Block 6, H.&G.N.

Loving County

Eppenauer and others' No. 2 J. G. Allen, 2,310 feet southwest of the northeast line and 330 feet southeast of the

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northwest line of Section 90, Block 1, W.&N.W.R.R.

Montague County

Carter & Rycade Oil Co.'s No. 15 R. W. Cunningham and others, 450 feet north and 750 feet east of the SW cor. of their lease and located in the L. B. Norton Survey A-574.

Palo Pinto County

Bennings and others' No. 1 Strawn Townsite, 1,960 feet north and 2,280 feet east of the SW cor. of the H. Bird Survey A-26. McLester Oil Co.'s No. 3 A. P. Wilbar, 800 feet south and 2,000 feet west of the NE cor. of the James Latham Survey A-279.

Pecos County

J. R. Bell and others' No. 1 H. J. Eaton (Sun), 2,310 feet southwest of the northeast line and 2,310 feet northwest of the southeast line of Section 35, Block 3, H.&T.C.

Stephens County

Arrowhead Oil Co.'s No. 1 J. F. Brown, 700 feet south and 500 feet east of the NW cor. of the west 120 acres of the S half of the S half of Section 31, Block 6, T.&P.

Wichita County

P. Flynn's No. 1 George L. Woodard-B, 300 feet north and west of the SE cor. of Section 248, Waggoner Colony Subdivision.

Young County

W. F. Hamilton's No. 3 W. T. Finch heirs, 150 feet south and 450 feet west of the NE cor. of the N half of the SW of Section 40, T.E.&L. Lindsey Drilling Co.'s No. 1 W. S. Husted, 150 feet north and east of the SW cor. of the NW of Section 27, T.E.&L. J. J. Moran's No. 3 W. B. Howard, 750 feet south and 850 feet east of the NW cor. of the north 30 acres of the west 80 acres of the W. B. Howard 260-acre tract out of Section 3,401, T.E.&L. Petroleum Production Co.'s No. 9 J. and C. Graham, 150 feet south and 450 feet east of the NW cor. of their 48-acre lease out of Section 2,249, T.E.&L. E. R. Riggs' No. 5 I. M. Kirkland, 1,075 feet south and 625 feet west of the NE cor. of the I. M. Kirkland 120-acre tract out of Section 2,249, T.E.&L. E. R. Riggs & Mollenkoph's No. 1 R. B. Ward, 450 feet south and east of the NW cor. of the NE of Section 2,248, T.E.&L. W. R. Stafford and others' No. 1 Dossett & Watson, 150 feet north and east of the SW cor. of the east 60 acres of the north 100 acres of Section 1,927, T.E.&L. H. K. Stastny and others' No. 1 S. Eichelberger and others, 150 feet south and west of the NE cor. of the east 85 acres of the south 185 acres of Section 1,448, T.E.&L. F. D. Willis and others' No. 2 I. M. Kirkland, 725 feet south and 1,435 feet east of the NW cor. of Section 2,249, T.E.&L., and located on their 3.7-acre lease. Willis-Terrell and others' No. 1 J. Nowakowsky, 150 feet south and west of the NE cor. of the S half of the NE of Section 278, T.E.&L.

Upton County

C. F. Corzelius and others' No. 1 J. H. Shirk (Tidal), 418 feet north and 2,317 feet east of the SW cor. of Section 15, Block 3, M.-K.-T.

NORTH CENTRAL, PANHANDLE AND WEST TEXAS

Corrections

In Brown County: Warren and others' No. 1 J. W. Newton, 2,475 feet south and 1,200 feet west of the NE cor. of the George Stubblefield Survey No. 622, being 150 feet north and east of the SW cor. of the J. W. Newton 56-acre tract.

In Eastland County: H. B. Mays and others' No. 2 J. L. Brashear, 500 feet south and 660 feet east of the NW cor. of Section 6, E.T.R.R., Block 6.

In Loving County: Lockhart & Co.'s No. 1 W. W. Hubbard, 330 feet northwest of the SE line and 3,970 feet southwest of the NE line of Section 83, Block 33, H.&T.C.

In Coleman County: Guffey Brothers and others' No. 2 Peggie Brothers, 450 feet north and 210 feet west of the SE cor. of the Peggie Brothers' 241-acre tract out of the B. Alderata Survey No. 273.

In Kimble County: Kamon & Mudge Oil Co.'s No. 1 Mrs. P. T. Hodges, 600 feet east of the NE cor. of the W. Randell Survey No. 28, and located in the George Kimble Survey No. 27, A-359.

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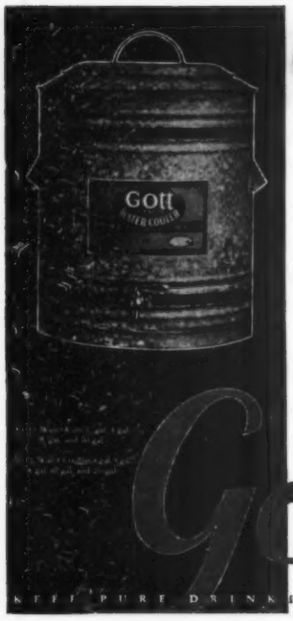

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TEMPERATURE OF WELLS AND DRILLING DEPTHS

Study of earth temperatures which was started and financed by the American Petroleum Institute a few years ago for the purpose of determining the relation between temperatures and oil fields may have several other practical applications for the oil man, according to John A. McCutchin, research observer for the American Petroleum Institute who has been taking deep well temperatures in Oklahoma under the direction of Dr. Charles N. Gould, director of the Oklahoma Geological Survey.

Among the problems which may confront the oil man in the future and in which a knowledge of earth temperatures will play an important part is the question of how deep it will be possible to drill for oil. In some fields the oil companies are also making use of temperature studies for the purpose of improving the efficiency of repressuring and pumping operations.

The possibility of drilling 15,000-foot wells in the future is often discussed by oil men, Mr. McCutchin said. In planning to drill a well to that depth, the probable temperature at the bottom of the well should be determined as accurately as possible in advance of drilling. In some areas where the rate of increase in temperature is 1 degree to about 35 or 40 feet in depth, the temperature at 15,000 feet would be so high that it would probably affect ordinary drilling equipment. However, Mr. McCutchin has found that in Oklahoma the general rule is that where the granite rock is buried under great depths of sedimentary formations, the increase in temperature with depth is not so great, and it may be possible to drill much deeper than any present wells without seriously affecting the drilling tools.

At the present time no one knows how far down oil may be expected to occur under favorable structural conditions, if oil-bearing formations are present at great depths. In many areas granite is found at comparatively shallow depths and in those areas the temperature problem would not be important for the driller since no one would expect to find oil after encountering granite. Since oil has been found at depths of 6,000 to 8,000 feet during the past few years, it is believed by many oil men that in the future deeper wells will be drilled in favorable areas by those who believe oil may be found at any depth where the formations and structural conditions are favorable. And it will be in these deep wells that the question of temperatures must be considered and equipment designed to stand this heat if the deep drilling is to succeed.

OIL BURNER SALES SHOW SLIGHT GAIN

(Continued from Page 122)

to the seasonal decline in trade. Impetus gained during the peak months was still sufficient to carry through the year to a net gain.

An encouraging factor within the industry is the fact that there is no overproduction. There is a thin margin between demand and supply and the manufacturers are not loaded with stock. The year-end inventories are uniformly low, indicating that a healthy condition prevails among the manufacturers and dealers. Also there is a distinct feeling of confidence among the industry's leaders.

It is felt that the oil heating industry has passed through the most crucial year in its history with flying colors. The sound judgment of the leaders has been vindicated by the progress made in spite of the depression and the feeling is general that 1931 will prove to be an even more fruitful year.

NEW MEXICO OIL SUIT

The question of whether the act which was passed by the legislature of New Mexico in 1919, reserving to the State oil and gas rights on its public lands sold to individuals, is retroactive, is involved in a recent suit.

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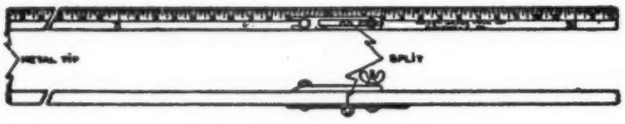

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LEGAL

Notice of sale of oil and gas lease. Department of the Interior, United States Land Office, Washington, D. C., December 16, 1930. Notice is given that the following described lands in two units in Oklahoma County, Oklahoma, are offered for sale under Section 17 of the leasing act of February 25, 1920 (41 Stat. 437) at the royalty rates for oil and gas and in accordance with the drilling requirements fixed in the standard lease form, copy of which may be procured from the Commissioner of the General Land Office: Unit No. 1: T. 11 N., R. 3 W., Sec. 1, Lot 7, containing 0.06 acres as shown upon the township plat approved September 23, 1873; including all Government rights to the accretions, if any, appurtenant thereto, and riparian rights within the abandoned bed of the North Fork of the Canadian River; and subject to any losses caused by erosion of the banks subsequent to the date of the survey. Unit No. 2: T. 12 N., R. 3 W., Sec. 35, Lot 4, containing 0.56 acres as shown upon the township plat approved September 23, 1873; including all Government rights to the accretions, if any, appurtenant thereto, and riparian rights within the abandoned bed of the North Fork of the Canadian River; and subject to any losses caused by erosion of the banks subsequent to the date of the survey. Offers may be submitted on each unit and on the combined units, each unit to be considered separately as to drilling requirements and royalty rates. The sale will be held at 10:00 a.m. on the 15th day of January, 1931, at the office of the United States Geological Survey, Room 205, Magnolia Petroleum Building, North Broadway Street, Oklahoma City, and the successful bidder will be required to deposit on the date of sale one-fifth of the bonus bid by certified check on a solvent bank, or cash. For the purpose of more properly conserving the natural resources of the oil and gas field within which said land is situated, (a) the lessee shall agree to unite with others in adopting and operating under a co-operative or unit plan of development or operation of said field whenever determined and certified by the Secretary of the Interior to be necessary or advisable in the public interest, and (b) the lessor consents that, if the oil and gas resources of said land can be recovered adequately by means of wells drilled or to be drilled on adjacent lands, in lieu of drilling and producing wells on the leasehold, the lessee may pay a sum estimated to reimburse the United States for current loss of royalty, such sum, unless determined under a co-operative or unit plan of operation approved by the Secretary of the Interior, to be fixed monthly by the supervisor of oil and gas operations, subject to appeal to the Secretary of the Interior whose decision shall be final. Bidders are warned against violation of the provisions of Section 59, U. S. Criminal Code, approved March 4, 1909, prohibiting any unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids in the discretion of the Secretary of the Interior. (Signed) C. C. Moore, Commissioner

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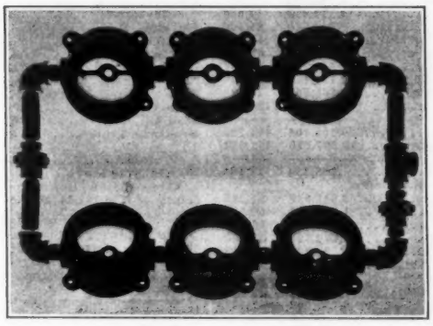

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Report for Month of October

Runs

	Month (bbls.)	Dy. Av. (bbls.)
Prairie P. L. Co.	3,121,000	101,000
Gulf P. L. Co.	1,304,473	42,080
Texas P. L. Co.	663,580	21,406
Magnolia P. L. Co.	1,526,813	49,252
Empire P. L. Co.	1,941,657	62,634
Cosden P. L. Co.	964,324	31,107
Stanolind P. L. Co.*	2,797,750	90,250
Oklahoma P. L. Co.	2,265,807	73,091
Other lines	5,607,900	180,900
Total October	20,203,304	651,720
Total September	19,907,520	663,584
Difference	295,784	11,864

Shipments

Prairie P. L. Co.	3,015,849	97,285
Gulf P. L. Co.	1,554,155	50,134
Texas P. L. Co.	1,402,414	45,239
Magnolia P. L. Co.	1,670,595	53,890
Empire P. L. Co.	2,199,420	70,949
Cosden P. L. Co.	868,359	28,012
Stanolind P. L. Co.*	3,264,951	105,321
Oklahoma P. L. Co.	2,259,884	72,899
Other lines	5,797,000	187,000
Total October	22,032,627	710,729
Total September	22,227,564	740,918
Difference	194,937	30,189

Stocks

Prairie O. & G. Co.*	37,795,000
Gulf P. L.-Gypsy Oil Co.	7,850,531
The Texas Company	3,953,520
Magnolia Petroleum Co.	5,650,076
Empire P. L. Co.	5,038,396
Mid-Continent Pet. Corp.	3,701,526
Stanolind Crude Oil Pur. Co.*...	19,500,000
Oklahoma P. L. Co.	2,822,113
Carter Oil Co.	9,786,911
Other lines	23,928,000
Total October	120,126,073
Total September	120,894,006
Difference	767,963

*Estimated. Prairie and Stanolind shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF NOVEMBER

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for October and November:

	Oct., 1930	Nov., 1930
Nat. Transit	135,934.22	104,496.10
S. W. Pa. P. L.	82,961.29	71,488.99
Eureka P. L.	329,128.04	272,972.79
Buckeye P. L. (Macksburg)	354,552.32	293,767.83
Buckeye P. L. (Cleveland)	12,508.84	9,244.34
Buckeye P. L. (Lima, etc.)	94,154.99	72,798.02
Indiana P. L.	4,483.25	3,171.88
Cumberland P. L.	172,782.21	157,587.04
N. Y. Transit	35,614.60	28,186.00
Tide Water P. L.	27,863.60	22,612.53
Pure Oil	189,448.04	190,625.17
Stoll Oil Ref.	19,496.16	27,202.39
Bradford Tran.	344,649.24	315,826.43
Total	1,803,576.80	1,569,979.51
Daily average	58,179.89	52,332.65

Note—Indian Refining Co. had other receipts of 280,327.14 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for October and November:

	Oct., 1930	Nov., 1930
Nat. Transit	479,245.86	402,823.28
S. W. Pa. P. L.	187,406.27	243,639.09
Eureka P. L.	247,221.25	192,900.15
Buckeye P. L. (Macksburg)	217,217.64	246,434.15
Buckeye P. L. (Cleveland)	2,200.10	1,949.80
Buckeye P. L. (Lima, etc.)	1,029,180.06	1,138,273.04
Indiana P. L.	548,201.97	360,294.63
Cumberland P. L.	126,573.84	96,581.63
Southern P. L.	69,576.30	34,921.19
N. Y. Transit	169,187.25	182,392.43
Northern P. L.	80,085.21	69,933.33
Tide Water P. L.	574,109.31	164,443.71
Pure Oil	274,485.43	295,355.25
Indian Ref.	334,226.70	269,600.16
Bradford Tran.	263,300.96	356,796.37
Tuscarora Oil	285,721.78	342,813.68
Total	4,887,939.93	4,399,141.89
Daily average	157,675.48	146,638.06

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana at the close of October and November:

	Oct., 1930	Nov., 1930
Nat. Transit	830,161.58	823,883.04
S. W. Pa. P. L.	543,474.82	432,055.87
Eureka P. L.	1,483,216.69	1,501,400.77
Buckeye P. L. (Macksburg)	656,581.88	547,588.35
Buckeye P. L. (Cleveland)	65,770.92	43,726.09
Buckeye P. L. (Lima, etc.)	4,992,794.24	4,622,221.25
Indiana P. L.	795,428.98	748,856.72
Cumberland P. L.	521,527.42	567,723.01
Southern P. L.	265,170.20	315,451.62
N. Y. Transit	178,747.41	126,550.60
Northern P. L.	459,246.38	508,980.54
Tide Water P. L.	811,218.64	976,136.74
Pure Oil	433,436.65	332,491.81
Indian Ref.	61,037.68	71,646.44
Tuscarora Oil	104,667.41	16,477.12
Bradford Tran.	235,074.97	216,140.95
Total	12,437,555.87	11,851,380.92
Decrease	374,463.12	586,174.95

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of October and November showing gross stocks of the above fields:

	Oct., 1930	Nov., 1930
Pennsylvania	3,961,667.74	3,970,186.37
Lima	845,272.27	752,285.03
Kentucky	594,637.03	626,748.00
Mid-Continent	6,611,577.52	6,155,312.11
Illinois	3,102.03	24,171.92
Michigan	421,299.28	322,677.49
Total	12,437,555.87	11,851,380.92

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1927	1928	1929	1930
January	56,209	52,904	51,749	75,907
February	61,298	57,002	51,833	79,256
March	63,247	57,485	54,252	76,688
April	60,927	56,812	58,444	84,536
May	60,284	62,067	59,902	80,548
June	62,757	58,230	58,833	75,430
July	58,674	57,144	66,087	68,921
August	60,870	57,745	66,087	54,291
September	60,285	53,487	67,315	56,595
October	147,080	58,100	76,093	58,179
November	57,275	53,865	74,831	52,332
December	59,089	52,025	74,561	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1927	1928	1929	1930
January	141,227	146,465	165,721	217,623
February	133,534	167,368	159,387	224,355
March	132,777	158,883	161,474	228,846
April	140,227	172,935	169,737	241,845
May	144,594	180,559	184,281	248,383
June	149,772	188,024	185,404	234,401
July	151,850	189,470	194,763	207,094
August	188,653	192,853	184,946	205,506
September	144,213	194,138	201,214	193,999
October	147,036	176,000	191,367	157,673
November	150,975	176,898	202,743	146,633
December	144,504	173,572	186,257	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1928	1929	1930
January	12,276,710	7,596,564	12,230,045
February	12,180,419	8,738,825	12,991,561
March	12,239,725	9,062,058	13,247,217
April	11,740,125	8,978,172	13,233,901
May	11,602,468	8,903,560	13,052,965
June	11,287,678	8,921,275	13,396,885
July	10,819,231	9,211,595	13,263,589
August	10,236,743	9,440,642	13,047,051
September	9,660 910	9,443,067	12,812,018
October	9,229,709	9,441,101	12,437,555
November	8,366,553	9,868,538	11,851,380
December	7,539,555	11,253,953	.....

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, November 30	2,006,922.39
Runs from wells	402,182.15
Other receipts	315,102.33
Regular deliveries	354,615.46
Other deliveries	337,218.11

The amount of Illinois oil run by the Tide Water Pipe Co. in November was 22,612.53 bbls. Deliveries were 27,863.60 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
November	424,794.68	355,403.12
1929—		
February	517,320.17	503,387.78
March	728,319.67	586,049.68
April	515,374.27	654,297.94
May	608,981.60	673,812.83
June	568,454.70	818,845.97
July	611,106.79	828,159.44
August	626,351.99	746,425.06
September	582,457.66	669,947.73
October	622,302.83	558,558.68
November	565,108.75	427,064.63
December	548,924.41	489,368.81
1930—		
January	543,387.95	498,293.91
February	548,416.33	414,536.59
March	631,944.49	469,119.53
April	530,074.22	509,304.69
May	605,147.37	504,069.84
June	572,662.57	468,658.81
July	604,529.54	383,454.47
August	594,642.12	375,742.43
September	457,001.11	371,491.61
October	478,442.12	320,888.71

Tide Water Pipe Co., Ltd., also delivered in November, 678,217.66 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1929-30—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
November	18,900	3,167	41,667	14,699	3,767	82,200	.....	.....	.....	.....	2,400	84,600
December	12,968	.....	46,129	12,613	7,225	79,935	.....	.....	.....	.....	2,335	82,290
January	18,484	1,936	34,257	32,323	9,516	86,516	.....	.....	.....	.....	2,258	88,774
February	7,678	.....	34,714	14,321	5,000	51,714	.....	.....	.....	.....	2,807	54,521
March	10,548	3,065	28,871	8,774	22,484	73,742	.....	.....	.....	.....	805	74,548
April	7,767	.....	14,369	11,600	7,433	41,167	.....	.....	.....	.....	7,600	48,767
May	5,194	8,451	28,161	9,484	2,774	54,064	.....	.....	.....	.....	774	54,838
June	3,300	.....	33,933	30,767	2,333	65,333	.....	.....	.....	.....	2,400	67,733
July	17,355	7,774	43,419	23,839	6,452	98,839	.....	.....	.....	.....	4,645	103,484
August	7,413	3,742	38,968	21,226	6,258	81,613	.....	.....	.....	.....	97	81,710
September	6,300	6,400	25,600	13,400	9,567	61,267	.....	.....	.....	.....	2,433	63,700
October	2,516	3,065	27,258	16,419	4,903	54,161	.....	.....	.....	.....	5,355	59,516

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1929-30—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
November	23,633	18,900	125,200	41,100	28,200	237,033	2,233	13,533	6,667	2,500	23,933	260,966
December	29,774	15,387	133,742	31,000	23,775	233,678	5,548	16,484	6,613	1,774	30,419	264,097
January	21,161	10,678	134,581	38,677	43,806	248,903	4,322	6,453	.....	548	11,323	260,226
February	24,500	14,714	147,357	36,026	39,726	262,323	2,821	11,072	3,500	1,964	19,357	281,680
March	28,355	3,839	151,806	36,645	34,902	255,548	4,323	11,645	839	2,419	19,226	274,774
April	31,400	6,933	123,500	40,433	19,434	223,700	.....	7,400	2,433	4,167	14,000	237,700
May	24,129	9,323	174,194	39,291	28,226	275,161	8,194	11,548	2,935	1,323	24,000	299,161
June	51,533	15,667	121,067	45,033	25,033	258,333	4,413	17,367	2,167	1,333	25,300	283,633
July	42,097	9,548	154,968	37,935	36,032	280,580	5,678	9,161	2,097	2,387	19,323	299,903
August	29,032	4,484	145,613	33,355	35,097	247,581	8,419	9,323	8,548	3,000	29,290	276,871
September	38,367	8,533	150,933	34,500	25,567	258,400	6,433	12,234	.....	3,800	22,467	280,867
October	19,839	11,742	146,194	35,355	26,967	240,097	6,065	7,067	2,774	2,545	18,451	258,548

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1929-30—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
November:	Month	21,317,540	19,193,760	24,896,024	3,430,560	1,911,060	1,853,565	2,350,110	4,029,000	78,981,619
	Daily average	710,585	639,792	829,868	114,352	63,702	61,785	78,337	134,300	2,632,726
December:	Month	21,705,554	20,092,876	25,609,833	3,549,066	1,917,071	1,878,352	2,378,764	4,168,100	81,299,596
	Daily average	700,179	648,156	813,394	114,486	61,841	60,592	76,734	134,455	2,622,568
January:	Month	21,963,242	20,802,984	25,284,352	3,273,197	1,817,685	1,780,969	2,151,090	4,216,000	81,309,519
	Daily average	709,137	671,064	815,624	105,587	58,635	57,451	69,390	136,000	2,622,888
February:	Month	20,885,660	17,977,624	23,314,637	2,965,704	1,608,376	1,738,435	2,027,984	3,780,000	74,298,419
	Daily average	745,916	642,058	832,665	105,918	57,442	62,087	72,429	135,000	2,653,517
March:	Month	19,699,979	19,112,306	25,503,830	3,504,395	1,817,871	1,943,093	2,337,035	4,231,500	78,149,383
	Daily average	635,483	616,526	822,679	113,045	58,641	62,680	75,388	136,500	2,520,947
April:	Month	18,768,742	19,541,310	24,799,768	3,734,252	1,734,460	1,909,552	2,334,810	4,134,000	76,946,894
	Daily average	625,625	651,377	826,658	124,475	57,482	63,652	77,827	137,800	2,564,897
May:	Month	19,044,444	20,587,503	26,214,068	3,978,285	1,659,895	1,914,290	2,565,219	4,402,000	80,365,804
	Daily average	614,337	664,113	845,615	128,335	53,545	61,751	82,749	142,000	2,592,444
June:	Month	18,020,795	19,754,900	25,643,705	3,765,060	1,704,060	1,923,621	2,519,190	3,880,000	77,211,331
	Daily average	600,693	658,490	854,791	125,502	56,802	64,187	83,973	129,300	2,573,711
July:	Month	18,802,024	18,032,514	25,910,939	3,541,409	1,713,680	2,079,769	3,275,894	3,844,000	77,200,319
	Daily average	606,517	581,694	835,835	114,239	55,280	67,089	105,674	124,000	2,490,328
August:	Month	18,770,466	17,255,034	25,538,513	3,491,530	1,700,102	2,151,120	3,193,241	3,417,000	75,517,106
	Daily average	605,499	556,614	823,823	112,630	54,842	69,391	103,011	110,226	2,436,030
September:	Month	17,984,306	16,509,120	23,640,726	3,405,510	1,583,280	2,008,060	3,239,010	3,396,000	71,766,012
	Daily average	599,477	550,304	788,023	113,517	52,776	66,935	107,967	113,200	2,392,199
October	Month	18,244,053	16,632,523	23,878,035	3,571,913	1,636,552	2,142,885	3,225,550	3,627,000	72,958,513
	Daily average	588,518	536,533	770,259	115,223	52,792	69,125	104,050	117,000	2,353,500
Total 12 months		235,226,806	225,492,454	300,234,470	42,210,982	20,794,152	23,322,701	31,597,980	47,124,600	926,004,145

1931

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509,304.69
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Total all ports
84,669
82,289
88,774
54,321
74,548
48,767
54,838
67,733
103,484
81,710
63,760
59,516

Total all ports
260,964
264,097
260,238
281,759
274,774
237,709
299,161
283,663
299,903
276,871
280,867
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Total
78,981,639
2,632,720
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2,653,517
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2,520,947
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